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DEPARTMENT OF AGRICULTURE.

SPECIAL REPORT—No. 27.

REPORT

UPON THE

CONDITION OF CROPS

SEPTEMBER 1, 1880.

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SEPTEMBER REPORT OF GROWING CROPS.

COTTON.

The returns to this department on the 1st of September show a heavy decline in the condition of the cotton crop during the month of August. The general average condition is 91, against 102 for the month ending August 1.

The following are the State averages: North Carolina, 100, a loss of 6; South Carolina, 93, a loss of 5; Georgia, 95, a loss of 3; Florida, 91, a loss of 5; Alabama, 86, a loss of 13; Mississippi, 88, a loss of 11; Louisiana, 88, a loss of 11; Texas, 97, a loss of 13; Arkansas, 95, a loss of 11; Tennessee, 90, a loss of 17.

The average condition September 1 during the last five seasons is as follows:

States.	1876.	1877.	1878.	1879.	1880.
North Carolina	93	83	86	83	100
South Carolina	91	84	80	81	93
Georgia	90	77	81	82	95
Florida	83	94	91	85	91
Alabama	83	91	92	84	86
Mississippi	87	88	89	89	88
Louisiana	90	92	83	87	88
Texas	87	70	101	66	97
Arkansas	97	99	95	99	95
Tennessee	119	100	91	107	90
General average	92	86	90	85	91

The number of counties reporting cotton is 330, of which 80 report above 100, 73 report 100, and 187 below. They are classified as follows:

States.	100.	Above.	Below.	Total.
North Carolina	6	14	20	40
South Carolina	4	4	10	18
Georgia	15	7	29	51
Florida	3	4	7	14
Alabama	7	7	18	32
Mississippi	3	6	27	36
Louisiana	4	3	11	18
Texas	16	24	31	71
Arkansas	9	8	14	31
Tennessee	6	3	10	19
Total	73	80	187	330

As compared with the condition on August 1, the returns September 1 show a universal decline. The South Atlantic States, however, show

less than the other cotton-growing States; the only complaints from that section are, too much rain in August after a long drought in July, and rust. In Alabama, Mississippi, and Louisiana there is a heavy decline reported; in Alabama there is much complaint of rust and boll-worm in nearly every section, and too much rain in a large portion of the State; in Mississippi and Louisiana too much rain is reported from all sections, and the ravages of boll-worm and rust are generally noted. In Texas the decline from the very high condition reported August 1 is not surprising; the condition September 1 was still very high; the weather in most sections is reported favorable; caterpillars and boll-worms are reported in many localities, but not generally. In Arkansas there is reported too much rain and rust; in Tennessee there is in a large section very dry weather reported and injury from drought.

The following notes from correspondence are given:

North Carolina.—*Cabarrus:* Recent rains have caused dropping of squares and bolls; there is also rust. *Columbus:* Has rusted badly on some farms. *Mecklenburg:* Very heavily fruited, and two weeks earlier than last year; five new bales sold yesterday; rust complained of in some sections. *Warren:* Damaged some by rains. *Beaufort:* Greatly damaged by excessive rains; picking a week earlier than usual. *Duplin:* But little made since July 20, owing to heavy rains; bolls and squares are shedding, and picking has commenced. *Franklin:* Materially damaged by heavy rains. *Nash:* Prospect not near so good as in July; too much rain. *Pamlico:* Up to August 1 the finest crop ever seen; too much rain since. *Pender:* Injured by rain. *Perquimons:* Condition reduced by continuous rains. *Montgomery:* The causes for the falling off of cotton are various; want of early stand owing to dry weather at planting time: excessive rainfall and rust. *Bertie:* Too much rain early in August. *Currituck:* Sustained injury from excessive rains; too much weed at the expense of fruitage, and large quantities of bloom washed away. *Halifax:* Crop on light sandy soils damaged by rains. *Cumberland:* Taking the rust badly. *Gaston:* Rust has caused some injury; has grown very vigorously within the past ten days with only an occasional bloom. *Guilford:* Best crop we have had for forty years. *Brunswick:* Damaged by rains. *Gates:* Late rains have injured crop some, although it is still considered good. *Greene:* Weed the finest I ever saw, but crop will not come up to the average. *Wake:* Prospects never were better. *Wilson:* Doing well; opened ten days earlier than usual, and picking has commenced. *Sampson:* The wet weather of July and hot, dry weather of August caused cotton to quit growing on light soils, and it now looks like the October crop; it is maturing rapidly, and one-half is now opened. *Camden:* Damaged by excessive rains, but crop earlier than usual. *Chowan:* Short on account of rust and heavy rains; picking commenced two days sooner than ever known in this county. *Stanly:* Very good and fruiting well; some rust.

South Carolina.—*Fairfield:* Improved during August, but not good yet. *Darlington:* Has failed very much in the last three weeks; a great deal more rust than usual. *Aiken:* A two weeks' drought during August caused rust, which has injured crop some. *Georgetown:* Suffered from rains; crop well developed as to weed, and heavily fruited. *Barnwell:* Looking well, but picking retarded by rainy days. *Colleton:* Larger yield than for many years; crop too well matured to sustain injury from caterpillars. *Hampton:* Is being rapidly gathered, but has suffered some from rust. *Horry:* Badly injured by heavy excessive rains; injured also by rust; picking has commenced, and it is found that the fruitage of the late planted is very inferior. *Laurens:* Favorable rains have brought the crop above average; picking has commenced. *Oconee:* Looking well; picking commenced earlier than last year. *Clarendon:* Am now eighty-three years old, and I have never seen a fairer prospect for cotton, but unfortunately

we have had a storm of rain lasting about forty hours without intermission, washing out and damaging crop about 45 per cent. *Williamsburg:* August has been a bad month for cotton; rust prevails to some extent, and the crop is on the decline. *Lancaster:* Injured by rains. *Kershaw:* Damaged by rust and blight. *Marion:* Plant unhealthy; picking very much advanced. *Lexington:* Plant suffering considerably from rust in sandy soils, but may probably reach an average crop.

GEORGIA.—*Baker:* Rusted badly. *Coffee:* Injured some by too much rain, which caused shedding. *Decatur:* Fallen off at least 10 per cent. on account of protracted rains, rust, &c.; worms are now stripping it. *Warren:* Damaged by rain and rust; prospect at present gloomy. *Gordon:* Prospects better than at this time last year. *Jasper:* Doing well; no worms yet. *Marion:* Prospects as good as for several years past. *Muscogee:* Improved very much during August; great complaint of rust in some localities. *Upson:* An eight weeks' drought will well nigh ruin crop in our immediate section; rust prevailing to a great extent. *Carroll:* Not so good as was expected; rust and dropping of bolls have shortened the crop some. *Charlton:* In some sections an entire failure, owing to rust. *Columbia:* The promise is a fine one. *Hart:* Not so good generally as at last report, but owing to increased acreage a larger crop will be made than ever before. *Merriwether:* Late, shedding badly; early, stands well. *McDuffie:* More or less affected by rust on the gray lands; on red lands the best crop in six years. *Brooks:* Rains have done much damage. *Coweta:* On old and uplands has turned yellow and is shedding; yield per acre will not be as heavy as last year. *Lee:* Caterpillars and wet and windy weather prevailing. *Putnam:* Picking commenced, and yield of lint very good to the 100 pounds, but crop cut short by rains and drought. *Scriven:* Rust has taken hold, and the caterpillar is also reported. *Stewart:* Early and guano cotton opening finely, and picking has fully begun. *Terrell:* Damaged by wet weather since July. *Dawson:* Prospects good; no rain, no caterpillars or other insects. *Haralson:* Complaint of rust. *Milton:* Excessive rain has caused rust; crop, however, good as yet and is opening ten days earlier than usual. *Wilkes:* Drought in some portions of the county and heavy rains in others injured crop some; opening rapidly; there is rust in the red-land crop, an unusual circumstance. *De Kalb:* Crop will be smaller than last year owing to dry weather and rust; nearly ten days earlier than last year. *Lincoln:* Too much rain; growth too rapid, which, with rust, will naturally affect the crop. *Troup:* Excessive rains and rust have caused shedding of squares and young bolls; caterpillars are on the low-lands and rust on the gray and sandy lands.

FLORIDA.—*Alachua:* Late rains have caused much dropping of fruit. *Bradford:* July and August rains caused shedding of forms and small bolls to some extent. *Madison:* Damaged by a storm that has been raging for three days past. *Suwanne:* Staple long and crop promises well; picking has commenced; some complaint of boll-worms. *Columbia:* Injured by recent storm. *Gadsden:* Injured by a severe storm within the past three days. *Marion:* Gathering well and will yield finely.

ALABAMA.—*Barbour:* Great complaint of rust; boll-worm has also done almost unprecedented injury; caterpillars now putting in an appearance, and will certainly destroy top crop and late cotton. *Bibb:* Picking progressing slowly; too hot. *Crenshaw:* Fell off largely on account of drought, rust, and worms in places. *Elmore:* Being very much damaged now by rust and caterpillar; yield will not be equal to last year. *Greene:* Rust has caused a reduction of average; no damage from worms as yet. *Lee:* Failing fast; too much rain and rust; boll-worm doing some damage. *Lowndes:* Has suffered from drought, rain, and rust. *Shelby:* Rust and rain have cut down the prospects at least one-fifth, and we feel safe in predicting another falling off in September. *De Kalb:* Weather unfavorable during August; cotton damaged some by a destructive storm of wind and rain. *Pike:* Opening rapidly; some damage from rust, but no injury as yet from worms. *Calhoun:* Pretty fair, but the August crop of fruit not so good as was expected. *Coffee:* Materially injured by rust; rains have been very heavy, and invariably have proved disastrous to cotton. *Conecuh:* Opening well

and ten days ahead. *Clay:* Damage reported from rust and boll-worms. *Marengo:* Damaged by rust and boll-worms. *Bullock:* Cut off considerably by black rust and caterpillars. *Clarke:* Crop fine in southeastern portion of county, but injured in other portions by rust. *Calhoun:* Good. *Hale:* London purple and Paris green used more generally this season than usual, and the ravages of the caterpillar have been stopped where the poisons have been applied in time, but so much damage had been done previously by the rust and boll-worm that it is doubtful whether much benefit will be derived, further than aiding the bolls not fully grown to reach maturity. *Saint Clair:* Growth stopped and otherwise injured by wet weather. *Wilcox:* Rust has been bad, and now the worms are making their appearance in sufficient numbers to destroy the crop within ten days. *Franklin:* Injury apprehended from excessive rains. *Cleburne:* Damaged by August rains and rust.

Mississippi.—*Clarke:* Ruined by rust and rains; on some of the best cotton lands it will take over seven acres to make a bale; bolls opening sooner than usual, and the impression is that the crop will be gathered by October. *Grenada:* Rust very bad in some portions of the county; the high estimate of one month ago will not be realized by 20 per cent., judging from present appearances. *Jasper:* Seriously injured by rust. *Panola:* No rain generally since the first of August; much damage from rust and the army-worm. *Prentiss:* Dry weather has caused bolls and squares to fall; loss severe on cotton prospects. *Rankin:* Too much rain during summer; cotton on uplands shedding badly. *Scott:* Will be much shorter than was expected owing to rust. *Simpson:* Crop will be shorter than last year; rains have caused too much growth of weed and but little fruit; middle crop will be small and top crop will depend on the season. *Yazoo:* Planted too late to amount to much. *Noxubee:* Opening rapidly and picking has commenced; crop better than last year, and will yield as much as can be gathered by the existing labor. *Leake:* Wet weather during latter part of July and during August caused a disease called black rust, which seemed to affect the boll just as soon as it bloomed; the borer also done much damage, the two causes reducing crop prospects nearly one-half. *Carroll:* Too much rain followed by hot and dry weather has caused much shedding. *Covington:* Injured some by too much rain. *Lee:* Prospects never so fine; picking commenced. *Madison:* Fallen off very much since last report; rust and boll-worms the cause. *Lafayette:* Too much rain in some portions of the county and too little in others, causing shedding of squares and diminishing the yield. *Marshall:* Damaged by rust, wet season in July, and cold weather first week in August. *Benton:* Severely injured by rain and drought. *Choctaw:* Very good; hear some complaints of rust. *Jefferson:* Too much rain and intense heat: some worms and plenty of rust. *Leflore:* Damaged from shedding and rust; picking has fully commenced and more opened than usual for the season. *Newton:* Failed unusually from rust, blight, and boll-worm; opening rapidly and being picked. *Yalabusha:* Extreme dry weather during August has reduced the condition; rust has also appeared, which always has a damaging effect; opened two weeks earlier than usual and good picking can be done now. *Copiah:* Damaged by wet weather, rust, and boll-worm. *Sumner:* Badly damaged; rust and too much rain. *Hinds:* Injury from boll-worm, shedding, rust, and rot since August 1 nearly 40 per cent.; rains now prevent picking, which will cause further loss. *Lauderdale:* Early part of August too wet; boll-worm caused much injury; hot and dry weather since the rains have caused more injury from rust than was ever before known. *Sunflower:* Continued rains have damaged the crop at least 10 per cent.; never had the army-worm here, although it is very destructive twenty-five miles west of here. *Washington:* In some localities the army-worm is destructive and the boll-worm is causing damage throughout the county generally; wet weather continues. *Tishemingo:* Too much rain; sprouting in boll and rotting. *Holmes:* Still raining and prospects of not more than half a crop.

Louisiana.—*Bienville:* Very much injured by boll-worms; worms increasing, and likely to destroy many fields of late cotton. *Calcasieu:* An unusually rainy summer,

which ordinarily is very unfavorable to cotton, but, contrary to expectation, the crop is flourishing, and no worms are reported. *Grant:* Cut off very much, owing to rains causing rust and rot; boll-worm doing damage in some places. *Rapides:* Rain almost every day since the 22d of June last; crop almost ruined. *Richland:* Prospects very flattering; no worms yet. *Washington:* Not doing so well, in consequence of rains; much shedding, and a few worms. *West Carroll:* Too much rain during July; season good now. *Cameron:* Crop shortened one-fourth by excessive rains. *Concordia:* Rains too partial; some sections too much, others none at all; young cotton growing too fast and not maturing well; picking later than last year. *Madison:* Too much rain; early cotton shedding badly. *West Feliciana:* Early planted has declined in condition, and late planted improved. *Bossier:* Boll and cotton killer very destructive this year. *Point Coupée:* Too much rain; early planted lost much by shedding of leaves from rust and bolls; late crop very promising. *Tangipahoa:* Weather very dry; picking progressing finely.

TEXAS.—*Bell:* Condition and quality better than ever before. *Brazos:* Picking going on briskly; per cent. of lint to seed greater than ever known; labor not sufficient to gather crop by 1st of January next. *Comanche:* Cotton and boll worms doing considerable damage throughout about one-fourth of the county; first year of their ravages here. *Dallas:* Would be hazardous to express an opinion owing to immense numbers of boll-worms who put in appearance about fifteen days ago, the first time in this section; some planters report a destruction of half the bolls in their fields; now receiving first new cotton; staple long and very fine. *Ellis:* The best crop ever raised; some damage by boll-worms, a new thing in the county; hands for picking scarce; four thousand pickers could find employment in this county three weeks from now. *Harrison:* Late cotton has suffered materially from boll-worm and square-worm, *alias* "sharpshooters"; early, well-worked crop good; has also suffered some from too much rain. *Hill:* Too much rain; crop making immense growth of weed and favoring the work of boll-worms. *Hood:* Being badly damaged by the boll-worm. *Kaufman:* Looking unusually good; hear some complaint of boll-worms; first bale picked sold at 17 cents per pound. *Medina:* Stood fair a week ago, but the worm has damaged it some since. *Morris:* Too much rain, and boll-worms worse than ever known before. *Trinity:* Picking has commenced, and the crop is better than for years. *Waller:* Too much rain has caused squares and forms to drop; boll-worms very numerous; some rust and blight. *Washington:* Picking going on lively; plant has a rank growth, and worms can do no harm now. *Polk:* Picking commenced; some small birds, new to us (one of a brass color, the other rather long-bodied and of a blue color), we believe, have destroyed the cotton fly and worm. *Anderson:* An exceptional good crop; picking booming. *Angelina:* Continued rains have retarded crop; caused much falling off of bolls. *Austin:* Excessive rains have caused rank growth of the plant; shedding badly and lower bolls rotting, causing much loss of the first pick, particularly on rich lands; worms are scattered and have, as yet, done but little damage. *Erath:* Cut down at least one-half since last report by caterpillar and boll-worms, pests but little known heretofore in this county. *Freestone:* Damaged by boll-worm. *Lampasas:* Below average, owing to drought. *Rusk:* Boll-worms and dry weather has caused a loss of many squares and young bolls. *Stephens:* Free of worms and may now be considered safe. *Titus:* Plant very large, but badly damaged by heavy rains; boll-worms have been very destructive within the past six weeks, and now nothing remains but the overgrown weed and bottom crop. *Collin:* Since last report boll-worm has made frightful ravages; it is impossible just now to give an approximate estimate of the destruction. *Coryell:* Being seriously damaged by boll-worm. *Grayson:* Damage from boll-worm estimated at 50 per cent. *Tarrant:* Seriously damaged by boll-worm. *Red River:* Boll-worm still at work; crop cut off one-half. *Chambers:* Weather favorable for opening and picking. *Gillespie:* Some fields entirely destroyed by worms. *Gonzales:* Promises an immense yield. *Hamilton:* Seriously damaged by rains and boll-worms. *Hopkins:*

Too much, in July, scorching sun, and boll-worms have seriously damaged the crop; cannot estimate the loss sustained. *Williamson:* Promises to be better than for twenty years. *McLennan:* Much of crop destroyed by boll-worms; prospect somewhat better than ten days ago. *Madison:* Suffered from boll-worms; opening and being picked. *Navarro:* Injured by drought and boll-worms; bottom crop is all open, being picked and sent to market. *Panola:* Damaged by boll-worm and rains. *Rockwall:* The boll-worm has played havoc with the crop. *Shelby:* Seriously injured by boll-worm and dry weather. *Victoria:* Injured by heavy winds and rain. *Wise:* Boll-worms have reduced crop at least one-half. *Jackson:* Promises a fine crop; boll-worm is now doing some damage. *Nacogdoches:* Injured by drought and boll-worm. *Somervill:* Materially damaged by boll-worm. *Burnet:* Good prospects for a heavy crop. *Harris:* Injured by rain, causing rot and shedding of forms. *Hunt:* Thirty days ago the prospects were good for a bale to the acre, but since then the boll-worm has caused injury amounting to not less than 40 per cent. *Upshur:* Damaged by heavy rains and boll-worms. *Bexar:* Weather splendid for picking; some worms, but too late for much damage. *Karnes:* Damaged by a heavy storm in August, probably one-fourth; the worms may prove beneficial instead of injurious. *San Patricio:* Promises a splendid yield. *Bastrop:* Exceedingly fine; worms now doing material damage. *Clay:* Damaged by boll-worm.

ARKANSAS.—*Craighead:* Prospects good just now; it is, however, growing rather too fast, which causes tangling and pulling down with the weight of the bolls. *Crittenden:* Reduced some on account of blight; several thousand acres abandoned on account of scarcity of labor. *Hempstead:* Injured greatly by rain during July and August, and now we have the army-worm, making prospects of a short crop. *La Fayette:* Fallen off owing to rains in July and August. *Montgomery:* Rust has made its appearance extensively. *Van Buren:* Fruited well; stalks are loaded with bolls, blooms, and squares. *Saint Francis:* Too much stalk and not enough fruit, owing to rank weed; opening some; complaints of rust. *Jackson:* Injured by drought during August. *Pope:* Shedding considerably. *Dorsey:* Too much rain and cool mornings caused rust, but the hot weather stopped it without much damage. *Lonoke:* Black rust or blight has appeared; no serious alarm felt. *Drew:* Crop in highlands suffering from rust. *Clay:* More forward than usual. *Garland:* Rain has caused some rust; condition good. *Johnson:* Some complaint of shedding; opening very fast; boll-worm and rust in some localities. *Pulaski:* Injured by wet weather and boll-worm. *Fulton:* Great complaint of damage from rust. *Howard:* Seriously injured by boll-worm and drought. *Sharp:* Regular and good seasons have made certain the best crop raised here for many years. *Ashley:* Seriously damaged by rust. *Baxter:* Drought has cut off the top bolls. *Desha:* Too much rain has caused reduction of crop. *Prairie:* Seriously injured by rust; no rust in new land but on *all the old land* that has been continuously planted in cotton. *Faulkner:* Three weeks earlier than last year; picking progressing finely; some little rust but injury slight. *Franklin:* Boll-worms and rust have greatly reduced condition of crop since last report.

TENNESSEE.—*Tipton:* Season during August not good; shedding of fruit, blight, and rust have done damage. *Gibson:* Much complaint of rust; picking commenced two weeks later than last season. *Williamson:* Doing well and opening. *Bedford:* Being injured some by a prevailing drought. *Haywood:* Condition reduced by drought. *Madison:* Protracted drought since last report has cut off cotton considerably. *Henderson:* Has fallen off a great deal on account of dry weather; opening quite early. *Shelby:* Opening rapidly and being safely picked. *Lawrence:* Maturing, and over an average crop.

CORN.

The average condition of corn on September 1 was 91 against 98 on August 1, and 100 July 1. It is somewhat lower than last year, when the average, September 1, was 95.

The following table shows the average during the growing season since four years.

Month.	1876.	1877.	1878.	1879.	1880.
July	97	85	95	93	100
August	100	92	96	93	98
September	99	91	92	95	91

The Middle States, Gulf States, and Pacific States are above average, but these represent less than one-eighth of the crop. The New England and South Atlantic States fall short of average about 2½ per cent., representing a still smaller portion of the crop. The great corn regions of the Mississippi Valley, on both slopes, show a marked deficiency, and fully account for the declining condition.

The northern portion of the Atlantic slope presents considerable complaints of drought. To the southward there was sufficient rain, but local injuries by storms are reported. The Gulf States stand high on account of the extraordinary condition of the Texas crop, 121. The growing conditions were very favorable in the Gulf States and the Southern inland States, but in the last named section there are complaints of severe drought, reducing the general average to 92. North of the Ohio River the drought in most sections, and storms in others, cut down the average to 91. A few counties also show damages by insects. The same conditions were still more operative west of the Mississippi River, which falls one-eighth short of an average condition. On the Pacific coast, California was over average, and Oregon short, but the crop of the latter is too small to vary the result.

The following extracts from correspondents will illustrate the local aspects of the crop.

MAINE.—*Androscoggin:* All crops shortened by drought. *Franklin:* Late crops injured by drought. *Oxford:* Killed on low lands by frost August 26. *Penobscot:* All crops injured by dry weather. *Piscataquis:* Drought prevented it from filling well. *Somerset:* Crops are very light: driest season for forty years. *Sagadahoc:* Looking very well.

NEW HAMPSHIRE.—*Carroll:* Dry weather reduced it. *Cheshire:* Crops here suffered by drought. *Hillsborough:* Needs rain. *Rockingham:* Remarkably good. *Strafford:* Remarkable crop year.

VERMONT.—*Addison:* Seriously affected by drought. *Caledonia:* Injured by frost in some sections, in others by drought. *Orleans:* Crops of all kinds are good.

NEW YORK.—All crops seriously injured by drought. *Allegany:* Late crops suffered by drought; corn on low lands cut by frost, August 16. *Erie:* Retarded by drought; not earing well. *Genesee:* Full average crop. *Saint Lawrence:* Late crop injured by drought. *Washington:* Shortened by drought; some fields destroyed by frost. *Westchester:* Never looked better. *Livingston:* Greatly improved since rain. *Onondaga:* Some damage by grasshoppers. *Madison:* Exceedingly good. *Sullivan:* Full average crop.

NEW JERSEY.—*Atlantic:* Late rains improved all crops. *Burlington:* Improving finely. *Camden:* Promises an extraordinary yield. *Gloucester:* Very good. *Morris:* Prospects for a large yield. *Salem:* very fine. *Warren:* Excellent; late-planted may have short ears by drought.

PENNSYLVANIA.—*Armstrong:* Drought prevented earing well. *Butler:* Did not ear well. *Bedford:* Abundant crop. *Beaver:* Badly hurt by drought. *Blair:* Looks well; average crop. *Crawford:* Badly hurt by drought. *Fayette:* Extraordinary crop. *Huntingdon:* Late rains made it a good crop. *Indiana:* Good and forward *Lehigh:* Late-planted suffered by drought. *Lycoming:* Full average crop. *McKean:* Damaged by wire worm. *Mifflin:* Largest crop ever grown. *Northumberland:* Good stand; doing well since rain. *Perry:* Biggest crop for years. *Sullivan:* Growing rapidly since rain. *Venango:* Half crop; drought. *Washington:* never better. *Wayne:* All crops suffered by drought.

MARYLAND.—*Carroll:* Best for years. *Cecil:* Some injury by drought. *Harford:* Never more promising. *Montgomery:* Generally above average. *Prince George's:* Materially shortened by drought. *Somerset:* Average quality; but acreage under average. *Worcester:* All crops seriously injured by drought.

VIRGINIA.—*Bedford:* Best crop since 1865. *Buchanan:* Injured by drought. *Craig:* Good crop. *Chesterfield:* Finest crop since 1860, *Culpeper:* Best for several years. *Caroline:* Best crop for ten years. *Clarke:* Fine. *Dinwiddie:* Best crop since 1865. *Fairfax:* Abundant crop. *King and Queen:* Best for years. *Mecklenburgh:* Remarkably heavy. *Orange:* Curtailed by drought. *Rockingham:* Fine crop. *Gloucester:* Greatly improved by recent rains. *Lancaster:* Best season and finest crop in twenty years. *Northampton:* Fine season; prospects very fine. *Henry:* Considerable loss by hail. storm.

NORTH CAROLINA.—*Almance:* Best for ten years. *Beaufort:* Some damage by rain. *Buncombe:* Two weeks early and very good. *Bertie:* Too much rain for growing crops. *Brunswick:* Drought, succeeded by heavy rains, damaged all crops. *Columbus:* Good crop. *Currituck:* Light yield; excessive rains. *Camden:* Excessive rains damaged it. *Chowan:* Good as can be raised. *Davie:* Average crop. *Forsyth:* Never better. *Franklin:* Very fine. *Halifax:* Best for fifteen years. *Warren:* Much damaged by rain. *Wayne:* Luxuriant. *Yadkin:* Prospects of a heavy yield. *Nash:* Best for years. *Pender:* Injured by excessive rains. *Perquimons:* Fair average. *Stokes:* Hail and wind destroyed some. *Wake:* Has improved, but never recovered from the effects of the drought. *Swain:* Best for several years. *Wilson:* Very good. *Jackson:* Above average. *Stanly:* Damaged on bottom lands by overflow; upland is excellent. *Haywood:* Uneven and late; worms.

SOUTH CAROLINA.—*Barnwell:* Three-fourths crop; rain came too late. *Colleton* Late-planted has improved since rain. *Fairfield:* Almost a failure. *Georgetown:* Three-fourths crop; drought. *Kershaw:* Three-fourths crop. *Horry:* Better than usual. *Laurens:* Ten per cent. short by drought. *Lexington:* Too wet for late-planted. *Williamsburg:* Early-planted injured by drought; late crop is average.

GEORGIA.—*Baker:* Sufficient for home use. *Chatham:* Injured by drought. *Coffee:* Much better than anticipated. *Carroll:* More smut than usual. *Columbia:* Very poor. *Dawson:* Injured by drought. *Franklin:* Good on low lands; too dry for upland. *Hart:* Very poor on uplands. *Haralson:* Complaint of rust. *Habersham:* Nearly a full crop insured since rain. *Towns:* Best for years. *Meriwether:* A good deal of smut. *Union:* Very good. *Screven:* Quarter crop; drought. *Wilkes:* Half crop; drought. *Lincoln:* Late-planted will yield fair; rain came too late to help early-planted.

FLORIDA.—*Bradford:* Injured by rain; subsequently by drought. *Columbia:* Better yield than expected. *Madison:* No change since last report. *Marion:* Light crop. *Suwannee:* Good crop.

ALABAMA.—*Crenshaw:* Cut short by drought. *Calhoun:* Not so good as last year. *Conecuh:* Average crop. *Clay:* Decreased acreage. *Clarke:* Suffered for want of cultivation. *Cullman:* All crops are looking well. *De Kalb:* Severely damaged by storms. *Elmore:* Damaged by dry weather. *Greene:* Worst crop for years. *Lee:* Early-planted cut short by drought; late crop is doing well. *Morgan:* Prospects never better. *Saint Clair:* Excellent. *Cleburne:* Damaged by drought.

MISSISSIPPI.—*Clarke:* Suffered by rust. *Copiah:* Badly injured by birds and squirrels. *Choctaw:* Best crop since 1861. *Grenada:* Early-planted excellent; late crop one-third short by drought. *Prentiss:* Average crop both in quantity and quality *Simpson:* Cut short by drought; not enough for home consumption. *Yazoo:* Early-planted is excellent; late crop a failure. *Noxubee:* Ten per cent. below last year. *Lee:* Three-fourths crop; wet weather prevented cultivation. *La Fayette:* Heavy crop. *Lauderdale:* Excellent crop. *Jefferson:* First-rate. *Newton:* Above average. *Sunflower:* Good crop. *Tishomingo:* Damaged 25 per cent. by wet weather.

LOUISIANA —*Grant:* Fine as our land will make. *Richland:* Good crop. *Washington:* Unusually good.

TEXAS.—*Bell:* Better than any previous year. *Collin:* Never better. *Coleman:* Heaviest crop ever raised in the county. *Dallas:* Good as can be made; enough for two years. *Hill:* Some damage by rain. *Heard:* Never better. *Hardin:* Wet weather injured late-planted. *Hamilton:* Not so good as usual. *Morris:* Too much rain for all crops. *Nacogdoches:* All late crops injured by drought. *Navarro:* Sound crop and good yield. *Panola:* Good crop. *Trinity:* Fine crop. *Titus:* Never better. *Washington:* Abundant yield. *Anderson:* Exceptionally good. *Austin:* Too much wet. *Lampasas:* Reduced by drought. *Rusk:* Twenty per cent. above average. *Stephens:* Ten per cent. above average. *Victoria:* Injured by storms. *Red River:* Best ever made. *Hunt:* Largest crop ever raised. *Upshur:* Acreage increased one-third. *Bee:* Some damage to growing crop by overflow in August. *Bexar:* Light crop. *Karnes:* Damaged one-fourth by storms. *San Patricio:* Good as ever made; hundreds of bushels destroyed by overflow August 12 and 13.

ARKANSAS.—*Baxter:* Injured by drought. *Craighead:* Good crop. *Drew:* Best for many years. *Fulton:* Drought reduced it 10 per cent. during August. *Faulkner:* Good yield. *Hempstead:* Better than last year. *La Fayette:* Never better. *Miller:* Best yield for years. *Lonoke:* Finest crop since 1863. *Pope:* Good as can be. *Van Buren:* Splendid. *Sharp:* Best for years. *Franklin:* Good average crop.

TENNESSEE.—*Anderson:* Above average; all growing crops booming. *Bradley:* Best for years. *Bedford:* Damaged by drought. *Davidson:* Three-fourths crop; drought. *Gibson:* Cut short by drought; late-planted almost a failure. *Greene:* Favorable season; good crop. *Weakley:* All crops nearly a failure; no rain for eleven weeks. *Sumner:* Splendid. *Williamson:* Three-fourths crop; drought. *Henderson:* Late-planted damaged by drought. *Shelby:* Splendid. *Haywood:* All crops declined during August; drought. *Loudon:* Late rains improved it beyond expectation. *Madison:* Three-fourths crop; drought. *McNairy:* Fall crops cut short by drought. *Sevier:* Unusually fine. *Washington:* Favorable season; excellent crop. *Lawrence:* Over average, and well matured.

WEST VIRGINIA.—*Berkeley:* Ten per cent. above average. *Braxton:* Above average. *Cabell:* Very short crop; drought. *Jackson:* Much injured by drought. *Marshall:* Light yield; drought. *Mercer:* Very good prospects. *Pleasants:* Injured on uplands by drought. *Raleigh:* Crops are unusually good. *Wyoming:* Best for ten years. *Roane:* Half crop; drought. *Tyler:* Light crop.

KENTUCKY.—*Allen:* Average crop. *Bracken:* Great improvement since rain. *Carter:* Splendid. *Calloway:* Damaged by wet, followed by drought. *Cumberland:* Very fine. *Carroll:* Injured by drought. *Edmonson:* Number one. *Elliott:* Promising. *Garrard:* Very good. *Graves:* All growing crops need rain. *Harlan:* Hurt by drought. *Hancock:* Splendid; acreage unusually large. *Henderson:* All crops cut short by drought. *Kenton:* Average yield. *Livingston:* All crops cut short by drought. *Lincoln:* Very good. *Lyon:* Full average. *Martin:* Promise of an abundant crop since rain. *Metcalf:* Best for years. *McLean:* Cut short by drought. *McCracken:* Damaged by rains. *Pendleton:* Injured by drought. *Pike:* Flattering prospects. *Trimble:* All crops short; no rains for six weeks. *Todd:* Splendid prospects since rain. *Shelby:* Three-fourths crop. *Russell:* Some injury by wind storms. *Fulton:* Late-planted cut short by drought. *Owsley:* Damaged by rain. *Union:* Cut short by drought.

OHIO.—*Ashland:* Good year for all crops. *Ashtabula:* Some fields injured by drought. *Coshocton:* Above average condition; acreage decreased. *Carroll:* Injured by drought and worms. *Columbiana:* All crops lowered by drought. *Champaign:* Severely injured by storms; many fields will not make a half crop. *Cuyahoga:* Three-fourths crop; drought. *Darke:* Shortened by drought. *Franklin:* Excellent. *Fairfield:* Best for years. *Geauga:* Average. *Lorain:* Fine. *Meigs:* Improved since rain. *Medina:* Damaged some by drought. *Monroe:* Best prospects for years. *Williams:* Below average; wet followed by drought. *Wayne:* Best prospects for all crops in forty years. *Ross:* Some injury by dry weather. *Hardin:* Some injury by drought; improved since rain. *Hocking:* Looking well. *Hancock:* Injured by drought in some localities. *Highland:* Best for years. *Scioto:* Splendid. *Shelby:* Injured by drought. *Summit:* Injured some by drought but will be nearly average. *Union:* Heavier crop than usual. *Paulding:* Great improvement by August rains. *Van Wert:* Late-planted half crop; drought. *Sandusky:* Two weeks early; sound and good crop. *Lucas:* Now being cut; fears of poorly filled ears.

MICHIGAN.—*Allegan:* Considerably affected by drought. *Clinton:* Heavy yield, but decreased acreage. *Eaton:* Shortened by wet weather. *Lenanee:* Much of it late and poorly worked. *Oakland:* Prospect of a good yield. *Wayne:* Wettest season since 1855. *Wexford:* Above average. *Newaygo:* Fine growth.

INDIANA.—*Bartholomew:* Much injured by drought. *Clay:* Very much injured by drought. *Carroll:* Poorest crop ever produced in the county. *Decatur:* Smallest yield for twenty years. *Greene:* Damaged 20 per cent. by drought. *Hancock:* Nearly ruined by drought. *Hendricks:* Retarded by drought. *Hamilton:* Forty per cent. short by drought. *Howard:* Half crop; drought. *Huntington:* Will make more than was supposed one month ago. *Jay:* Not good; too wet. *Knox:* Shortened by drought. *Madison:* Half crop; drought. *Noble:* Injured by drought. *Orange:* Short 20 per cent. by drought. *Steuben:* Has about recovered. *Shelby:* Twenty-five per cent. short by drought. *Spencer:* Three-fourths crop; drought. *Wabash:* Good in spots: will average a three-fourths crop. *Warren:* Injured by drought; late-planted, half crop. *Warrick:* Seriously damaged by drought. *Putnam:* Half crop; drought. *Pike:* Twenty-five per cent. short by drought. *Ripley:* Injured by drought. *Tipton:* Half crop; drought. *Whitley:* Earing out finely. *Starke:* Favorable showers in August brought it out beyond expectation.

ILLINOIS.—*Adams:* Greatly shortened by drought. *Boone:* Reduced 25 per cent. by drought. *Clark:* Above average. *Carroll:* Well advanced. *DuPage:* Seriously damaged in some localities by storms. *Douglas:* Cut short 25 per cent. by drought. *Fulton:* A good portion of it injured 25 per cent. by drought. *Ford:* Half crop; drought. *Greene:* Half crop; on thin land not fit for fodder; drought. *Grundy:* Damaged 30 per cent. by drought. *Henry:* Seriously injured by drought. *Hardin:* Badly damaged by drought. *Stark:* Shortened 10 per cent. by drought. *Lawrence:* Failure in three-fourths of county. *Kankakee:* Half crop; drought. *Kendall:* Severely injured by drought. *Madison:* Severely injured by drought; no rain from July 4 to August 29. *Saline:* All crops suffered severely by drought. *Shelby:* Seriously injured by drought. *Stevenson:* Average crop. *Tazewell:* Some of it too late to ripen. *Vermillion:* Excessive dry weather reduced it to an average crop. *Woodford:* Twenty-five per cent. short by drought. *Jackson:* Half crop; late-planted will be nothing. *Marion:* Half crop; drought. *Morgan:* Twenty-five per cent. short by drought. *Putnam:* Damaged 20 per cent. by drought. *Knox:* Drought. *Lee:* Acreage increased 10 per cent.; condition above average. *Piatt:* Late-planted cut short by drought. *Edgar:* Too dry. *Jersey:* Twenty-five per cent. injury by drought. *Johnson:* Twenty-five per cent. short by drought. *Moultrie:* Damaged 25 per cent. by drought. *Ogle:* Improved by recent rains. *Schuyler:* Much damaged by drought and chinch-bugs. *Wabash:* Cut short by drought. *Winnebago:* Injured by drought on light soils. *McHenry:* Will average a three-fourths crop. *Montgomery:* Late-planted destroyed by drought; early suffered some. *White:* Not a half crop; drought. *DeKalb:* Reduced

by August drought. *Effingham:* One-half destroyed by chinch-bugs. *Livingston:* Half crop; drought. *Logan:* Half crop; drought. *Henderson:* Short by drought.

WISCONSIN.—*Crawford:* Best for years. *Chippewa:* Injured by drought. *Dunn:* Damaged 30 per cent. by drought. *Wood:* Seriously injured by drought. *Rock:* Best promise for many years. *Portage:* Crops severely injured by hail in a portion of the county. *Racine:* Looking well. *Waukesha:* Never better. *Milwaukee:* Fair crop. *Walworth:* Good, except on very low lands.

MINNESOTA.—*Anoka:* Extra crop. *Faribault:* Maturing rapidly. *Fillmore:* Looks well. *Lac-qui-parle:* Cut short by drought. *Goodhue:* Injured by chinch bugs, hail, and excessive rains. *Wadena:* Late, but promising well. *Ramsey:* Good crop. *Martin:* Heavy crop, but rather late.

IOWA.—*Buena Vista:* Reduced by drought. *Clarke:* Never better. *Cedar:* Cut short by drought. *Calhoun:* Never more promising. *Cherokee:* Retarded by dry weather. *Clinton:* Shortened by drought. *Des Moines:* Three-fourths crop; drought and chinch-bugs. *Decatur:* Monster crop. *Dickinson:* Magnificent crop. *Davis:* Cut short by drought; recent rains may bring it up to average. *Howard:* Many fields too wet. *Humboldt:* Injured by drought, especially late-planted. *Harrison:* Cut short by drought. *Montgomery:* Doing well. *Ringgold:* Cut short by drought. *Union:* Shortened by drought. *Johnson:* Late-planted suffered by drought. *Marion:* Promises an extra yield. *Winneshiek:* Injured by drought. *Plymouth:* Doing nicely. *Shelby:* Rain come too late to help it. *Jasper:* Excellent crop. *Monona:* All late crops reduced by drought. *Jackson:* Reduced by drought. *Sac:* Shortened 20 per cent. by drought.

MISSOURI.—*Benton:* Too dry. *Bollinger:* Half crop; drought. *Caldwell:* Seriously injured by drought. *Clarke:* Very serious injury by drought. *Carroll:* Reduced by drought, but still an average crop. *Clay:* Short by drought. *Cooper:* Rotting badly in shock. *De Kalb:* Late-planted injured by drought. *Dent:* Half crop; drought. *Grundy:* Half crop; drought. *Gasconade:* Three-fourths crop; drought. *Greene:* Fine crop. *Putnam:* Prospects of a big crop. *Platte:* Quarter crop; drought. *Johnson:* Damaged 20 per cent. by drought. *Jasper:* Quite weedy. *Laclede:* Cut short by drought. *Lincoln:* Not over a half crop on uplands; late-planted failed; drought. *Livingston:* Three-fourths crop; drought and chinch-bugs. *Lawrence:* Good. *Madison:* Three-fourths crop; many fields burnt up. *Moniteau:* Half crop; drought. *Osage:* Damaged 50 per cent. by drought. *Saint Louis:* Very much injured by drought. *Montgomery:* Early-planted done well; late-planted a quarter crop. *Morgan:* Thirty-five per cent. short of an average; drought. *Reynolds:* Badly injured by drought. *Scotland:* Dry weather reduced it to an average. *Shelby:* Shortened by drought. *Saint Charles:* No rain since July 15. *Perry:* Short by drought. *Polk:* Not so good as anticipated. *Saint Genevieve:* Half crop; drought. *Sullivan:* Materially damaged by drought. *Maries:* Failure on uplands. *Mercer:* Damaged one-fourth by drought. *Taney:* Short, but improving since rain.

KANSAS.—*Clarke:* Rice corn will be a full crop. *Dickinson:* Very poor south of Smoky Hill River; drought and chinch-bugs; good in balance of county. *Doniphan:* Shortened by drought. *Decatur:* All crops a failure; late-planted may make 10 per cent. of a crop; settlers gone east to spend the winter. *Davis:* Drought injured late-planted. *Ellis:* Much of it late; rice corn raised in large quantities and promises a large yield. *Franklin:* Short 20 per cent. by drought and chinch-bugs. *Harper:* Chinch-bugs and drought reduced it one-half. *Hodgeman:* Big crop. *Osborne:* All crops nearly a failure; drought and chinch-bugs. *Smith:* Very poor; drought and chinch-bugs. *Jackson:* Seriously injured by chinch-bugs and drought. *Rooks:* Nearly ruined by dry, hot winds in August. *Nemaha:* Heaviest crop ever raised. *Rush:* Improved one-third since rain. *Lincoln:* About ruined by drought and chinch-bugs. *McPherson:* All crops short by drought. *Ness:* Half crop; drought and chinch-bugs. *Reno:* Cut short two-thirds by drought. *Saline:* Very light crop; drought and chinch-bugs. *Woodson:* Very light; no rain from July 3 to August 28. *Leavenworth:* Short

by drought. *Shawnee:* Drought and chinch-bugs have shortened all crops. *Johnson:* Shortened 30 per cent. by drought. *Rawlins:* A little over a half crop. *Cowley:* Half crop; hot winds and chinch-bugs.

NEBRASKA.—*Antelope:* Large acreage, but shortened by drought. *Buffalo:* Three-fourths crop; early-planted injured by drought and hot winds. *Cass:* Three-fourths crop; drought. *Cedar:* Greatly injured by drought. *Douglas:* Large acreage and good prospects. *Furnas:* Short 20 per cent. by drought. *Fillmore:* Badly injured by drought; some chinch-bugs. *Gage:* Average crop. *Greely:* All crops reduced by drought. *Hall:* Three-fourths crop; drought; bottom lands are average. *Holt:* Nearly a failure; hot and dry winds. *Sarpy:* Suffered by drought, especially late-planted of which there is a large proportion. *Kearney:* Prospects improved since rain. *Knox:* Affected by drought. *Polk:* Damaged by drought and chinch-bugs. *Webster:* Half crop; drought. *Washington:* Reduced 40 per cent by drought. *Seward:* Crops of all kinds greatly damaged by drought. *Lancaster:* Recent rains will help it. *Platte:* All crops shortened by drought. *Nuckolls:* Half crop; drought.

CALIFORNIA.—*Calaveras:* Fine crop. *Placer:* Full average. *Tulare:* Egyptian corn cultivated; will stand more heat and requires less moisture than Indian corn.

OREGON.—*Josephine:* Spring was late, but warm rains brought crops out better than expected. *Douglas:* Ten per cent. below average; cold spring and hot winds.

COLORADO.—*Boulder:* Rains have improved all late crops, but they will still be short. *Douglas:* Rain came too late to help grain crops. *Fremont:* All crops suffered by drought. *Larimer:* Poor crop; drought.

UTAH.—*Box Elder:* Better than any other crop. *Rich:* Decreased acreage. *Washington:* Blighted.

NEW MEXICO.—*Mora:* Injured by drought. *Taos:* All crops cut short by six months' drought.

DAKOTA.—*Hutchinson:* Poor crop; drought. *Hamlin:* Backward, but will be up to average. *Moody:* Damaged by drought. *Turner:* Improved by late rains. *Yankton:* Hurt by drought.

ARIZONA.—*Yavapai:* All crops are short from drought.

WYOMING.—*Carbon:* All crops are unusually good; no grasshoppers.

TOBACCO.

The following table exhibits the condition of this crop in the States named, compared with the condition a month ago and with that of September 1, 1878, and September 1, 1879:

States.	1880.		1878.	1879.
	August.	September.	September.	September.
Massachusetts	100	100	109	102
Connecticut	100	100	115	100
New York	.....	101	.....	.....
Pennsylvania	98	102	90	100
Maryland	57	80	89	96
Virginia	82	86	90	82
North Carolina	93	98	97	87
Tennessee	92	90	94	90
Kentucky	83	73	68	85
Ohio	93	91	82	74
Indiana	99	76	90	90
Illinois	97	92	79	100
Wisconsin	.....	101	.....	.....
Missouri	96	90	87	88
General average	86	84	81	87

We find from this exhibit that the September condition has improved from that of August, in Pennsylvania, Maryland, Virginia, and North Carolina, but declined in Tennessee, Kentucky, Ohio, Indiana, Illinois, and Missouri. For the whole, the condition is represented by 84 for September against 86 for August, being a decline of 2 per cent. The greatest decline for the month is that in Indiana, but that which has most influence in reducing the total is the decline that has taken place in Kentucky, the leading tobacco State. Here we have a decline for the month of 10 per cent., or an indicated condition 27 per cent. below an average, though 5 per cent. above the indications in that State for the same month in 1878. Two causes have principally operated to produce this result: 1st, the scarcity of plants that led to a reduced area; and, 2d, the severe drought that prevailed for a considerable time in many large tobacco-growing counties of the State.

Comparing the condition for the entire country, the 1st of the present month, with the condition at the corresponding date in 1878 and 1879, we shall observe that it stands intermediate between the conditions for those years, being 3 per cent. lower than in 1879, and 3 per cent. higher than in 1878.

While a considerable portion of the crop, and particularly in the leaf-tobacco States, had been cut and housed at the date of these returns, the bulk of the crop for the whole country still remained in the field to be improved, or the contrary, by the conditions of weather for the current month. How these conditions shall have affected the crop it will be the business of our correspondents to report in their returns for October 1, the tabulation of which should furnish reasonably accurate data for computing the crop of 1880.

The following extracts indicate the local aspects of the crop:

NEW YORK.—*Onondaga:* Growing finely, but somewhat uneven.

PENNSYLVANIA.—Considerable planted and is looking well. *Bedford:* Sparingly cultivated. *Perry:* Washed out on low lands; can't be beat on uplands. *Lehigh:* Very promising. *Lebanon:* Early-planted above average; late crop much below.

MARYLAND.—*Calvert:* About a one-fourth crop set owing to scarcity of plants; looking well. *Charles:* Very poor crop. *Prince George's:* Not over a half stand; spring fly or flea destroyed the plants.

VIRGINIA.—*Amherst:* Three-fourths crop. *Caroline:* Small acreage owing to scarcity of plants; good season. *Chesterfield:* Small crop planted; well grown and ripening nicely. *Dinwiddie:* Late-planted did not do so well as expected; horn-worm and some complaint of spot. *Henry:* Considerable damage by hail. *Pittsylvania:* Half stand; hail-storms and wet weather. *Mecklenburg:* Much injury by rains. *Orange:* Retarded by drought: improved since rain.

NORTH CAROLINA.—*Alamance:* Poorest crop for years; scarcity of plants in spring and excessive July rains. *Buncombe:* Acreage increased 50 per cent.; condition better than usual. *Davie:* Injured by hail. *Forsyth:* Very good. *Guilford:* Best crop in forty years. *Haywood:* Ripened prematurely; wet weather and rust. *Warren:* Much damaged by rain. *Wayne:* Stand not so good as last year, but the quality is superior. *Yadkin:* Damaged by hail. *Swain:* Good prospects; first time our farmers have tried making a crop for market.

ALABAMA.—*Conecuh:* Doing well.

TEXAS.—*Austin:* Second cutting is very good. *Titus:* Damaged by rain.

TENNESSEE.—*Anderson:* Above average. *Dickson:* Short crop; no season for setting the plants. *Lawrence:* Injured by excessive rains. *Robertson:* Poor crop, ripening with a short, narrow leaf; drought.

WEST VIRGINIA.—*Pleasants:* Much affected by drought.

KENTUCKY.—*Allen:* But little will be made. *Bracken:* Seasonable rains brought it out better than expected. *Barren:* Seventy per cent. of a crop planted; of this one-fourth died; not over half will mature. *Campbell:* Half crop; drought. *Caldwell:* Much injured by drought. *Calloway:* Damaged by wet, followed by drought. *Carroll:* Injured by drought. *Cumberland:* Short acreage; condition poor. *Fulton:* Looking well. *Graves:* Burning up; crop will be very short. *Henderson:* Cut short by drought over 50 per cent. *Hancock:* Very indifferent; much of it very small. *Trimble:* Injured by drought. *Kenton:* Very backward; prospects of a light crop. *Lewis:* Acreage larger than we can house. *Muhlenburg:* Small acreage; extreme wet followed by drought. *Todd:* Exceedingly poor; fly destroyed plants; season unfavorable. *Lyon:* Half crop. *McLean:* Cut short by drought. *McCracken:* Improved very much during August. *Pendleton:* Injured by drought and grasshoppers, followed by excessive rains that almost ruined it. *Trigg:* Acreage 40 per cent. short, owing to destruction of plants by the fly; condition about 50. *Taylor:* Much of it planted late and in danger of frost. *Union:* Shortened 20 per cent. by drought.

OHIO.—*Auglaize:* Small acreage; looks well. *Darke:* Shortened by drought.

INDIANA.—*Warrick:* Considerable of it planted late; retarded by dry weather.

WISCONSIN.—*Rock:* Acreage increased 50 per cent; some damage by hail. *Walworth:* Heavy crop.

IOWA.—*Chickasaw:* A little is being raised as an experiment, and is looking well.

MISSOURI.—*Maries:* Badly injured by drought.

INDIAN TERRITORY.—*Chickasaw:* Plants destroyed by the fly.

POTATOES.

The condition of potatoes, as returned September 1, shows a heavy decline since August 1; the condition as reported is 90 against 98 then. As compared with last year, on the 1st September, there is a loss of 5 per cent. Of all the Atlantic States Maine reports the lowest, 78, and Pennsylvania the highest, 95. In the West and Northwest, Michigan, Wisconsin, and Minnesota each report an average of over 100, while Indiana, Illinois, Iowa, Missouri, and Kansas are below 90, and the latter State is only 69. The universal complaint is drought during August. Insects are reported generally, but the damage is not great, except in some of the States west of the Mississippi.

BUCKWHEAT.

In the New England States, Maine and Vermont report a lower condition than last year at this time. The condition reported is 85 against 98 in 1879. Massachusetts and Connecticut report a higher average. New York and Pennsylvania, the two States that raise two-thirds of the whole crop of the country, report an average of 93 against 98 last year. Michigan, Ohio, and Wisconsin, the three States in the West that raise the largest portion of the crop sown west of the Alleganies, report a condition of 98 against 84 in 1879. The average of the whole country is 94 against 98 in 1879.

WHEAT.

In September our correspondents give a preliminary estimate of the condition of wheat, which affords an element of value in the final estimate of yield and quality. The September condition this year is represented by 90 against 92 in 1879 and 87 in 1878.

New England averages 87; complaints of drought in this region. The Middle States and Pacific States returned a full average condition. Schuyler County, New York, reports very favorably of the Canada silver chaff, the seed of which was furnished by the department. Late white wheats did not do so well in the Lehigh Valley. San Diego, Cal., reports the finest grain season known.

The South reports a very inferior condition, especially the Gulf States, which show but little more than two-thirds average. Rust, storms, and insects are charged with this falling off in condition. North of the Ohio, the great wheat region of the United States, the average is 95. Summit County, Ohio, reports the best yield in forty years, but other counties in the same region report a decline. Several counties average 20 bushels per acre. West of the Mississippi the drought greatly reduced the condition, bringing it to 84. As two other investigations will be made during the year it will not be prudent to give any estimate of the actual out-turn of the crop of 1880.

The following extracts from correspondence are given:

MAINE.—*Knox:* Yield 15 per cent. below average; drought. *Oxford:* Pinched by drought. *Piscataquis:* Heads short; drought. *Sagadahoc:* Almost a failure. *Waldo:* Yield below average; quality good.

NEW HAMPSHIRE.—*Carroll:* Thrashing out well. *Rockingham:* Good yield.

VERMONT.—*Caledonia:* Good crop. *Grand Isle:* All grain crops reduced by drought, barley excepted.

NEW YORK.—*Cattaraugus:* Secured in good condition. *Genesee:* Average yield; quality good, *Oswego:* Good quality, but light yield; winter-killed. *Schuyler:* Canada silver chaff from the department is the best variety; Fultz done poorly.

NEW JERSEY.—*Gloucester:* Thrashing out better than expected. *Morris:* Well filled; berry plump. *Salem:* Better than expected. *Warren:* Grain plump and fine.

PENNSYLVANIA.—*Beaver:* Yielding well, especially Fultz. *Butler:* Never better. *Bedford:* Good yield and quality. *Blair:* Reduced by rust on low lands. *Crawford:* Best crop ever raised. *Fayette:* Marvelous yield and excellent quality. *Monroe:* Good yield and quality. *Northumberland:* Under average. *Washington:* Better yield than anticipated. *Sullivan:* Not so good as expected. *York:* Full number of bushels, but light weight. *Lehigh:* Fair crop. *Lycoming:* Short straw, but well-filled heads. *Lebanon:* Inferior quality, especially late and white varieties; drought and mildew. *Perry:* Better yield than expected before thrashing.

MARYLAND.—*Baltimore:* Poor quality and light weight. *Carroll:* Thrashing out better than expected. *Harford:* Yield very irregular. *Montgomery:* Ten per cent. below average, both in quantity and quality.

VIRGINIA.—*Bedford:* Half crop. *Clarke:* Ten per cent. better yield than estimated. *Chesterfield:* Short crop, and quality indifferent. *Dinwiddie:* Harvested in good condition; some rust and smut. *Gloucester:* More or less shriveled. *Rockbridge:* Almost a failure; fertilized fields done best.

NORTH CAROLINA.—*Alamance:* Three-fourths crop. *Buncombe:* Light yield; qual-

ity good. *Forsyth:* Injured by rust. *Jackson:* Half crop. *Perquimons:* Fair average crop. *Yancey:* Better yield than expected. *Swain:* One-third crop. *Wilkes:* Injured by rust.

GEORGIA.—*Brooks:* Almost a failure. *Carroll:* Affected with fly and rust. *Columbia:* Almost a failure. *Gordon:* Rust made it a failure. *Towns:* Yield cut short by rust. *Union:* Half crop.

ALABAMA.—*Calhoun:* Almost a failure. *Elmore:* Badly rusted.

TEXAS.—*Bell:* Badly damaged by drought and rust. *Burnett:* Small yield; smutty. *Collin:* Damaged by rust and the fly. *Erath:* Damaged by drought and chinch-bugs. *Heard:* Damaged by wet in stack. *Hunt:* Injured in shock by rain. *Kaufman:* Much damage in stack by rain. *Titus:* Ruined by rust. *Williamson:* Much of it damaged in shock by wet. *Jack:* Some damage by drought. *Travis:* Half of it destroyed by storms. *Wise:* Failure; drought. *Upshur:* Acreage increased 10 per cent.; quality good.

ARKANSAS.—*Franklin:* Yielded about a one-third crop; quality good. *Pope:* Half crop.

TENNESSEE.—*Bradley:* Very small yield, and inferior quality. *Blount:* Very poor. *Decatur:* Damaged by rust. *Gibson:* One-third crop. *Sumner:* Severely damaged by rain. *Washington:* Better yield than expected. *Putnam:* Half crop; rust.

WEST VIRGINIA.—*Braxton:* Large yield and good quality. *Berkeley:* average yield; rank straw; ripened too suddenly; bearded varieties did best. *Mercer:* Superior to last year. *Pleasants:* good yield and quality.

KENTUCKY.—*Allen:* Damaged by wet at harvest. *Campbell:* Poor crop; average yield, 8 bushels. *Carter:* Not so good as last year; too wet. *Caldwell:* Very much injured by rust. *Carroll:* Poor yield; rust. *Edmonson:* Damaged by wet. *Elliot:* Failure on bottom lands by rust. *Garrard:* Average. *Greenup:* Harvested in the rain; much of it spoiled. *Kenton:* Yield far below our expectations. *Pike:* Good yield. *Lincoln:* unusually good. *Russell:* Badly rusted, and injured in shock by rain. *Shelby:* Half crop. *Todd:* rusted; grain shriveled. *McCracken:* Damaged in shock by wet. *Trigg:* Forty per cent. of an average crop; damaged by wet in shock. *Owsley:* Badly rusted.

OHIO.—*Allen:* Increased acreage, but bushels same as last year. *Coshocton:* Average yield; quality inferior. *Carroll:* Some fields yielded 40 bushels per acre. *Geauga:* Extra crop both in quantity and quality. *Hocking:* Better yield than last year. *Miami:* Twenty per cent. better than last year; average yield 22 bushels, number one grain. *Monroe:* Increased acreage will give about the same in bushels as last year. *Lorain:* Average yield, 21 bushels. *Ross:* Shriveled on low grounds. *Meigs:* Threshed out much better than expected. *Shelby:* Damaged by rust; increased acreage will give an average yield. *Summit:* Best in 40 years. *Paulding:* Great falling off in yield. *Van Wert:* Heavy straw, but light yield. *Sandusky:* Average crop.

MICHIGAN.—*Allegan:* Yield reduced by blight. *Bay:* Average yield of winter crop, 12 bushels. *Clinton:* Very light crop. *Eaton:* Shortened by wet weather. *Oakland:* Heavy crop; some fields yielded 50 bushels per acre. *Tuscola:* Yield not so good as expected. *Saint Clair:* Spring-sown almost a failure; Hessian fly. *Wexford:* Injured by wet at harvest. *Saginaw:* Very wet season; crops damaged both when growing and at harvest. *Shiawassee:* Injured by wet weather. *Leelenaw:* Winter-sown a good crop; spring crop poor and shrunken. *Livingston:* Stored in damp condition.

INDIANA.—*Decatur:* Yield one-third below last year; saved in good condition. *Steuben:* Average yield, 18 bushels; very plump. *Jay:* Good quality; yield far below last year. *Wabash:* Quality above average, but yield 20 per cent. less than last year. *Warwick:* Some damage by wet at harvest. *Noble:* Not so good as expected when cut. *Orange:* Eighty per cent. of an average crop; damaged by rain during harvest.

ILLINOIS.—*Boone:* Harvested in good condition. *Clark:* Average crop. *Carroll:*

Light yield. *Douglas:* Good quality, but lighter yield than expected. *Edgar:* Fultz yields the best and ripens earlier than common red amber. *Madison:* Best and largest crop ever produced. *Vermillion:* Average yield, 20 bushels. *Kendall:* Chinch-bugs took spring-sown; fall-sown winter-killed. *Lee:* Spring-sown a failure; large quantity of fall-sown, but poor quality. *Jersey:* Yield from 20 to 45 bushels: quality not so good as last year. *Ogle:* Spring-sown a half crop and poor quality; hot weather and chinch-bugs. *McHenry:* Injured in stack by wet and heat. *Montgomery:* Yield same as last year, but quality inferior. *White:* Lighter yield than expected.

WISCONSIN.—*Adams:* Chinch-bugs took whole fields of spring-sown, and damaged the entire crop; fall-sown badly winter-killed; many fields destroyed. *Calumet:* Average yield but 4 bushels; damaged by rains in shock. *Crawford:* Winter crop far below an average yield. *Dodge:* Stacked grain badly damaged by wet. *Juneau:* Injured by rain in stack. *La Fayette:* Slightly rusted. *Monroe:* Considerable damage by wet to stacked grain. *Rock:* Fair yield; good quality. *Racine:* Half crop; poor quality. *Waukesha:* Yield from 10 to 25 bushels; "Amsterdam" yields 30 bushels. *Vernon:* Harvested in good condition. *Waushara:* Light crop; chinch-bugs and drought. *Saint Croix:* In many places destroyed by hail. *Walworth:* Poor crop growing in shock.

MINNESOTA.—*Anoka:* Not so good as expected. *Blue Earth:* Badly damaged in stack by wet. *Cottonwood:* Good when harvested, but has been damaged in shock by wet. *Dodge:* Chinch-bugs injured it some; damaged in shock by wet. *Douglas:* Excellent condition; good grain. *Faribault:* Average yield, 15 bushels; quality excellent. *Fillmore:* Half crop; fair quality. *Goodhue:* Damaged by chinch-bugs, hail, rains, and blight. *Lyon:* Yield from 15 to 22 bushels; danger of damage in stack by wet. *Wadena:* Severe damage by wet in stack. *Ramsey:* Average yield, 18 bushels; harvested in good condition. *Nobles:* Only one-third stacked; wet weather is destroying much of it. *Jackson:* Harvested in good condition, but is now being injured in stack by wet. *Lac-qui-parle:* Average yield, 18 bushels. *Le Seuer:* Average yield, 18 bushels. *Nicollet:* Badly sprouted in stack; average yield, 17 bushels.

IOWA.—*Calhoun:* Above average. *Cherokee:* Full crop. *Clarke:* Good crop, but decreased acreage. *Decatur:* Almost a failure. *Floyd:* Yield less than expected; some fields not worth cutting. *Hardin:* Yield not so good as expected. *Howard:* Cut early to save it from chinch-bugs. *Union:* Small grain developed better than expected. *Montgomery:* Average yield, 15 bushels; quality good. *Ringgold:* Harvested in good condition. *Taylor:* Winter-sown a total failure. *Marion:* Very light yield. *Winneshiek:* Injured by chinch-bugs and blight. *Osceola:* Principally No. 2; rust. *Plymouth:* Mostly No. 2. *Jasper:* Grain in stack badly damaged by wet.

MISSOURI.—*Ballinger:* Half crop, and inferior quality; Hessian fly. *Caldwell:* Chinch-bugs. *Grundy:* Failure; open winter. *Holt:* Sprouting in stack. *Jasper:* Harvested in best condition, but much injured in stack by wet. *Laclede:* Very good. *Livingston:* Half crop; drought and chinch-bugs. *Moniteau:* Better than expected.

KANSAS.—*Dickinson:* Better yield than expected. *Doniphan:* Average crop. *Ellis:* Failure; drought. *Jackson:* Light yield, but excellent quality. *Ottawa:* Three-fourths of it too short for binding; injured in stack by wet. *Smith:* Nearly a failure; drought. *Rooks:* Almost nothing. *Nemaha:* Light crop; drought. *Sedgwick:* Cut short by dry weather. *Johnson:* Short straw, but well-filled heads.

NEBRASKA.—*Antelope:* Average yield, 11 bushels No. 2 grain; some chinch-bugs. *Douglas:* Two-thirds crop; good quality. *Furnas:* Hurt by drought. *Knox:* Fine quality; yield from 8 to 12 bushels. *Platte:* Much injured by drought and chinch-bugs. *Polk:* Damaged by chinch-bugs. *Nuckolls:* Not enough for home use; very few fields are worth cutting. *Sarpy:* Not up to our expectations; bearded varieties turning out very poor.

CALIFORNIA.—*Calaveras:* Yield much better than expected. *Humboldt:* Short heads, but well filled. *Placer:* Never so large a yield. *San Joaquin:* Much better than expected; berry a little shriveled, but the quantity is greater than ever before.

San Diego: Finest grain season we ever had. *Tulare:* Berry somewhat shriveled; quantity in excess of any previous year. *Lake:* Late winter and early north winds injured all crops.

OREGON.—*Linn:* Fall-sown fine quality and large yield; spring-sown not so good. *Wasco:* Injured by hot weather. *Yam Hill:* Winter crop 10 per cent. above average, both in quantity and quality.

COLORADO.—*Larimer:* Berry very fine; thin stand.

UTAH.—*Morgan:* Injured by frost.

DAKOTA.—*Hutchinson:* Full weight and fine quality, but short in yield.

INDIAN TERRITORY.—Failure; dry spring.

IDAHO.—*Nez Perces:* Excellent crop.

OATS.

The condition of oats at harvest is represented by the number 88, or 12 per cent. short of an average. The New England and Pacific States are nearly average. The Middle States present a good condition, or only 6 per cent. below average. The Southern States, especially the four Southern inland States, show a comparatively low condition, or about one-fourth below average. The great grain regions north of the Ohio River and west of the Mississippi fall short over 10 per cent. The same conditions that injured the wheat crops have been felt in the oats fields.

Table showing the condition, &c., of crops on the 1st day of September, 1880.

States.	CORN.	WHEAT.	RYE.	OATS.	BARLEY.	BUCK-WHEAT.	POTATOES.	
							Solanum tuberosum.	Batatas edulis (sweet).
	Average condition September 1.	Average condition when harvested.	Average condition when harvested.	Average condition when harvested.	Average condition when harvested.	Average condition September 1.	Average condition September 1.	Average condition September 1.
Maine	90	76	93	95	95	85	78	.....
New Hampshire	104	101	100	102	102	101	96	.....
Vermont	95	92	100	102	105	85	94	.....
Massachusetts	105	.....	100	.....	.....	.....	90	.....
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	103	.....	100	105	102	107	92	.....
New York	98	105	98	96	97	92	89	.....
New Jersey	107	101	98	86	.....	98	88	96
Pennsylvania	104	96	93	85	95	96	95	102
Delaware	101	103	95	67	.....	103	80	93
Maryland	100	93	91	68	.....	95	85	80
Virginia	113	89	92	60	.....	93	88	102
North Carolina	102	82	92	71	.....	99	83	100
South Carolina	86	54	78	90	.....	.....	95	91
Georgia	85	49	74	61	89	.....	88	96
Florida	95	.....	.....	53	.....	.....	104	103
Alabama	86	60	76	76	.....	.....	101	102
Mississippi	102	72	87	79	.....	.....	102	105
Louisiana	96	.....	.....	93	.....	.....	100	98
Texas	121	71	74	87	87	.....	103	112
Arkansas	110	78	89	83	.....	.....	100	105
Tennessee	90	65	80	58	82	101	91	100
West Virginia	91	102	97	84	.....	91	95	98
Kentucky	94	79	86	73	91	99	91	93
Ohio	100	103	97	82	96	96	96	99
Michigan	92	90	96	94	93	99	102	.....
Indiana	72	102	97	80	89	89	77	88
Illinois	80	93	91	89	92	84	78	90
Wisconsin	110	82	92	97	91	98	101	.....
Minnesota	96	91	101	98	98	100	103	.....
Iowa	99	79	96	95	98	92	89	90
Missouri	81	99	94	94	99	83	89	92
Kansas	79	66	73	61	62	65	69	80
Nebraska	73	69	67	65	70	76	81	84
California	102	99	81	100	102	.....	103	102
Oregon	88	103	94	94	95	.....	98	.....
Nevada, Colorado, and Territories	87	94	81	72	89	94	93	102

Table showing the condition, &c., of crops on the 1st day of September, 1880—Continued.

States.	TOBACCO.	COTTON.	SORGHUM.	SUGAR CANE (not s'rg'm).	APPLES.	PEACHES.	GRAPES.	STOCK HOGS. (Answer in hundredths as with other questions.)	
	Average condition September 1.	Average condition September 1.	Average condition September 1.	Average condition September 1.	Average condition September 1.	Product compared with an average.	Average condition September 1.	Number for fattening compared with last year.	Average condition as to weight and size.
Maine	.....	.....	.....	.....	88	.....	89	96	101
New Hampshire	99	.....	.....	.....	112	98	96	100	100
Vermont	.....	.....	.....	.....	79	.....	91	99	100
Massachusetts	.....	.....	.....	.....	105	100	90	102	200
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	.....	.....	.....	.....	115	.....	.....	100	100
New York	101	.....	.....	.....	106	99	98	97	100
New Jersey	.....	.....	.....	.....	102	71	112	94	99
Pennsylvania	102	.....	101	.....	96	87	95	97	99
Delaware	.....	.....	100	.....	97	68	105	100	100
Maryland	80	.....	.....	.....	84	64	95	96	97
Virginia	86	102	105	.....	70	46	100	95	98
North Carolina	98	100	102	.....	87	74	96	97	100
South Carolina	100	93	91	91	82	77	99	99	99
Georgia	89	95	92	91	50	30	75	94	96
Florida	102	91	.....	101	.....	.....	87	104	98
Alabama	101	86	96	96	66	45	85	96	96
Mississippi	88	88	97	107	72	65	88	101	96
Louisiana	.....	88	.....	104	56	34	38	98	101
Texas	.....	97	113	113	63	54	90	85	103
Arkansas	99	95	97	.....	92	94	98	104	103
Tennessee	90	90	99	.....	95	60	90	97	101
West Virginia	94	.....	95	.....	79	72	89	93	97
Kentucky	73	.....	93	.....	86	87	96	91	97
Ohio	91	.....	97	94	103	112	97	92	98
Michigan	.....	.....	95	.....	111	119	105	102	103
Indiana	76	.....	47	.....	88	101	98	93	98
Illinois	92	.....	83	84	94	102	98	90	98
Wisconsin	101	.....	105	103	117	.....	100	94	94
Minnesota	.....	.....	98	88	91	.....	96	101	100
Iowa	.....	.....	99	96	110	99	106	99	99
Missouri	90	.....	70	95	104	106	101	95	96
Kansas	.....	.....	93	101	93	67	91	90	98
Nebraska	.....	.....	86	84	76	47	90	97	99
California	.....	.....	.....	.....	88	63	109	92	106
Oregon	.....	.....	.....	.....	90	59	99	95	102
Nevada, Colorado, and Territories	92	92	90	100	81	50	82	99	97

PARTIAL SUMMARY

OF

SUGAR DETERMINATIONS,

MADE BY

THE CHEMICAL DIVISION, DEPARTMENT OF AGRICULTURE, FROM JULY 12 TO SEPTEMBER 15, 1880,

FROM

SORGHO-CANES AND CORN-STALKS

GROWN ON THE DEPARTMENT GROUNDS.

DEPARTMENT OF AGRICULTURE,
Washington, D. C., September 16, 1880.

The following table is a partial summary of the work of the chemical division of the Department of Agriculture in determining by chemical analyses the exact conditions of sorgho-cane and maize (corn) stalks at different periods of development.

The plants under examination were grown on the department grounds and from seed procured from different parts of the country, and bearing, for the most part, the local name of each.

A careful study of these tables will show why those who have heretofore undertaken to manufacture sugar from sorghum have sometimes succeeded in granulating sugar and have more frequently failed in doing so.

It will be noticed that among the sorgho-canes, Early Amber from D. Smith, Early Amber from Plant Seed Company, Early Golden and Honduras grown on Arsenal grounds; also, Lindsay's Horse Tooth and Improved Prolific, among the corns, have apparently reached their maximum per cent. of sucrose.

In the corns, analyses of the stage marked X have been made, in order to compare their results with those obtained from stalks from which the ears were plucked at the roasting stage.

Stages 13, 14, 15, and 16 of sorgho-canes cannot be very definitely described. Only a person who is accustomed to testing the stages can decide upon them.

Newspapers would oblige the department and confer a benefit on many of their patrons by circulating notice that the department has copies of this summary for gratuitous distribution among those engaged in the cultivation of sorghum who may choose to make written application for it to William G. Le Duc, Commissioner of Agriculture.

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR SORGHO-CANES.

1. Panicle just appearing.
2. Panicle two-thirds out.
3. Panicle entirely out. No stalk above the highest leaf.
4. Panicle just blossoming out at the top.
5. Flowers all out, stamens dropping off.
6. Seed well set.
7. Seed entering the milk state.
8. Seed becoming doughy.
9. Seed doughy; becoming dry.
10. Seed almost dry; easily crushed.
11. Seed dry; easily split.
12. Seed split with difficulty.
13. Seed split with more difficulty.
14. Seed split with still more difficulty.
15. Seed still harder.
16. Seed still harder yet.
*10. Beyond the 10th stage, but not determined because the seed was taken by birds.

Varieties of sorgho-canes.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Early Amber. Seed from canes raised by D. Smith for the Department.	July 12	1	6.5	.8	.....	1.45	36.27	1.028	4.71	.60	.99
	July 17	5	8.7	.8	2.74	2.24	43.97	1.049	3.10	7.81	1.83
	July 28	10	8.7	.8	1.69	1.43	65.06	1.066	2.23	11.75	2.20
	Aug. 12	*10	9.0	.8	1.63	1.21	60.00	1.072	.97	14.30	2.26
	Aug. 16	*10	9.5	.6	1.73	1.82	62.48	1.069	1.12	12.83	2.61
	Aug. 30	*10	8.4	.8	1.42	.94	33.95	1.069	1.20	12.70	3.50
	Sept. 8	*10	8.2	.7	1.19	.81	61.74	1.065	1.22	10.90	4.08
Early Amber. Plant Seed Company, Saint Louis, Mo	July 12	1	7.5	.6	.....	1.38	62.78	1.026	4.04	.98	.91
	July 20	5	8.7	.7	1.33	1.10	64.79	1.045	3.05	6.44	1.80
	July 26	10	8.6	.8	1.58	1.34	60.44	1.063	2.54	11.10	2.02
	Aug. 12	*10	8.9	.8	1.55	1.08	65.20	1.070	1.03	13.67	2.31
	Aug. 16	*10	9.1	.9	1.79	1.30	64.58	1.069	1.27	12.90	2.45
	Aug. 30	*10	8.8	.9	1.68	1.11	67.76	1.060	1.53	12.80	1.09
	Sept. 8	*10	9.1	.7	1.16	.69	56.19	1.058	.48	9.60	3.85
Early Golden. A. B. Swain, Elysian, Minn	July 12	1	7.0	.6	.....	1.35	63.90	1.023	3.68	.70	.77
	July 20	5	8.5	.7	2.17	1.74	58.27	1.048	3.10	7.03	1.64
	July 28	10	8.4	.7	1.52	1.12	39.41	1.066	1.85	11.81	2.52
	Aug. 12	*10	9.5	.9	1.77	1.37	63.57	1.071	1.16	13.69	2.56
	Aug. 16	*10	9.5	.9	1.71	1.02	79.84	1.064	1.30	11.72	2.63
	Aug. 31	*10	8.8	.8	1.56	1.01	57.54	1.047	2.21	6.79	2.60
	Sept. 8	*10	8.6	.7	1.41	.97	62.77	1.056	1.59	8.95	3.76
Early Orange. —— Hedges, Saint Louis, Mo	July 19	1	7.5	.9	1.82	1.31	60.18	1.031	5.09	1.39	1.56
	July 23	5	7.3	1.0	2.38	1.79	54.57	1.044	4.94	4.46	1.81
	Aug. 3	10	7.5	1.0	3.04	1.95	65.68	1.065	3.97	9.88	2.63
	Aug. 12	9	8.4	1.0	2.39	1.21	80.34	1.066	3.25	10.75	2.51
	Aug. 16	10	8.0	.8	1.85	1.33	65.84	1.069	2.73	11.62	2.67
	Aug. 23	10	8.2	.9	2.41	1.60	63.27	1.075	2.57	13.13	3.09
	Sept. 3	11	8.5	.9	1.93	1.19	60.37	1.062	1.61	13.36	3.30

White Liberian. Seed from canes raised by D. Smith for the Department.	July 12	1	7.0	.9	.....	2.38	46.57	1.023	3.28	1.19	.79
	July 21	5	8.0	.9	1.66	1 39	43.87	1.039	3.58	5.11	1.62
	July 31	10	8.8	.8	1.66	1.38	67.15	1.066	2.40	11.31	2.71
	Aug. 12	*10	9.2	.9	1.95	1.23	60.89	1.073	1.13	13.21	2.99
	Aug. 16	*10	7.3	.8	1.43	1.18	66.10	1.072	1.35	13.25	2.61
	Aug. 24	*10	9.2	.9	1.94	1.52	60.46	1.071	1.46	13.58	2.65
	Sept. 3	*10	8.8	1.0	1.96	1.32	66.44	1.058	1.90	11.17	1.77
Liberian. Blymyer & Co	July 27	1	7.3	1.1	2.95	2.26	61.96	1.037	4.67	2.49	2.34
	Aug. 2	5	8.3	.9	2.37	1.90	67.67	1.049	4.38	5.74	2.42
	Aug. 9	8	9.7	1.0	2.10	1.68	65.92	1.053	4.27	6.88	2.43
	Aug. 12	8	8.5	1.0	2.31	1.71	68.61	1.058	4.37	7.89	2.35
	Aug. 16	9	7.7	.9	2.11	1.49	69.70	1.058	3.17	8.84	2.40
	Aug. 26	11	8.3	1.2	2.68	2.08	68.15	1.060	3.03	9.16	2.72
	Sept. 8	13	8.5	1.0	2.53	1.96	62.02	1.074	2.15	13.51	2.04
Liberian. W. H. Lytle, Yellow Springs, Ohio	July 21	1	6.2	1.0	5.10	3.91	48.28	1.033	4.42	2.33	1.48
	July 30	5	8.0	.8	2.31	1.80	67.32	1.045	4.78	4.32	2.29
	Aug. 9	8	9.0	1.1	3.03	2.37	66.11	1.053	4.53	6.75	2.71
	Aug. 12	8	8.0	.9	2.11	1.58	68.86	1.057	4.08	7.85	2.31
	Aug. 16	8	9.2	1.0	2.17	1.59	65.74	1.060	3.73	8.78	2.49
	Aug. 26	11	8.2	1.0	2.34	1.65	69.18	1.064	2.88	9.94	2.94
	Sept. 3	13	8.5	1.1	2.77	1.94	67 00	1.062	3.04	10.33	2.31
Goose Neck. P. P. Ramsey, Belgrade, Mo	July 17	1	6.9	.9	1.51	1.12	60.49	1.025	3.85	1.02	1.73
	July 27	5	9.5	.9	1.90	1.47	66.27	1 034	4.05	2.39	2.36
	Aug. 3	9	9.3	1.0	2.00	1.52	66.28	1.058	3.45	8.73	2.47
	Aug. 12	9	9.0	.9	1.52	1.05	68.91	1.060	2.82	9.58	2.46
	Aug. 16	9	9.5	1.0	2.01	1.40	68.42	1.060	2.25	10.29	2.41
	Aug. 26	12	10.0	.9	1.52	1.25	60.00	1.062	1.87	10.84	2.50
	Sept. 9	15	9.5	.8	1.62	.95	57.40	1.067	1.00	12.24	3.02
Oomseeana. Blymyer & Co	July 15	1	6.3	.6	.....	1.82	31.60	1.023	2.84	1.55	2.30
	July 21	5	7.2	.8	2.86	2.22	42.80	1.035	2.57	4.33	1.84
	Aug. 2	10	9.3	.7	1.30	1.01	67.69	1.055	3.00	8.30	1.88
	Aug. 10	10	8.2	.8	1.27	1.02	67.53	1.061	1.91	10.94	2.28
	Aug. 12	10	7.5	.9	1.56	1.13	68.66	1.046	2.66	7.17	1.50
	Aug. 20	11	7.9	.8	1.29	.98	69.66	1.058	.63	11.38	2.55
	Aug. 26	13	9.0	1.0	1.99	1.38	66.06	1.060	2.15	10.21	2.26
	Sept. 9	15	8.4	.9	2.22	1.60	64.41	1.068	1.44	13.38	1.66
Oomseeana. W. I. Mayes & Co., Sweet Water, Tenn	July 27	1	7.8	.9	1.63	1.24	62.65	1.032	4.75	1.35	2.67
	Aug. 3	5	8.7	1.1	2 10	1.66	68.21	1.051	5.16	5.83	2.23
	Aug. 12	8	9.5	1.1	2.31	1.76	73.08	1.059	4.38	8.32	2.08
	Aug. 16	8	10.0	1.1	2.42	1.73	68.42	1.063	3.70	9.19	2.63
	Aug. 27	9	9.5	1.1	2.66	2.23	63.73	1.070	3.32	9.86	3.83
	Sept. 9	12	9.0	.8	1.80	1.16	65.59	1.064	2.60	11.40	1.79
Neeazana. Blymyer & Co	July 19	1	6.3	.7	2.24	1.67	57.98	1.031	5.18	1.12	1.60
	July 26	5	6.8	.7	1.20	.94	56.49	1.039	4.11	4.01	1.79
	Aug. 4	9	7.4	.8	1.70	1.25	67.31	1.057	3.92	8.51	1.80
	Aug. 12	9	7.5	.8	1.12	.79	64.62	1.062	3.66	9.27	2.51
	Aug. 16	9	8.2	1.0	2.29	1.67	68.22	1.062	1.54	10.17	3.36
	Aug. 27	12	7.5	.8	1.19	.86	64.19	1.067	2.80	10.86	3.12
	Sept. 4	14	7.3	.8	1.17	.87	62.94	1.069	1.94	13.13	1.96

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR SORGHO-CANES.

1. Panicle just appearing.
2. Panicle two-thirds out.
3. Panicle entirely out. No stalk above the highest leaf.
4. Panicle just blossoming out at the top.
5. Flowers all out, stamens dropping off.
6. Seed well set.
7. Seed entering the milk state.
8. Seed becoming doughy.
9. Seed doughy; becoming dry.
10. Seed almost dry; easily crushed.
11. Seed dry; easily split.
12. Seed split with difficulty.
13. Seed split with more difficulty.
14. Seed split with still more difficulty.
15. Seed still harder.
16. Seed still harder yet.
*10. Beyond the 10th stage, but not determined because the seed was taken by birds.

Varieties of sorgho-canes.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Neeazana. W. H. Lytle, Yellow Springs, Ohio	July 17	1	6.4	.8	2.47	1.83	60.05	1.029	4.95	1.13	1.86
	July 23	5	7.2	.8	1.85	1.31	54.77	1.051	4.91	6.08	1.90
	Aug. 6	9	7.5	1.0	1.60	1.19	64.26	1.059	3.71	8.25	2.73
	Aug. 13	10	8.0	.8	1.10	.81	61.41	1.066	2.87	11.54	2.15
	Aug. 16	10	7.6	.8	1.43	.99	64.44	1.067	2.89	9.90	3.70
	Aug. 27	13	7.5	.9	1.45	1.03	65.24	1.067	2.66	11.80	2.41
	Sept. 9	14	7.6	.8	1.69	1.15	67.81	1.058	2.45	9.73	3.04
Chinese. Seed from canes raised by D. Smith for the Department	July 20	1	6.1	.8	2.68	2.14	54.99	1.033	4.51	2.15	1.67
	July 27	5	7.8	.8	1.53	1.14	57.69	1.046	4.64	4.62	2.45
	Aug. 7	9	7.5	1.0	2.15	1.58	69.31	1.050	3.87	5.96	2.59
	Aug. 13	9	8.6	.7	1.32	.94	63.70	1.059	3.97	8.23	2.01
	Aug. 17	9	10.0	.8	1.47	1.10	60.48	1.061	4.62	7.80	2.42
	Aug. 27	12	8.9	1.0	2.04	1.34	69.05	1.058	3.98	8.14	2.62
	Sept. 9	15	9.5	.8	1.61	.97	66.52	1.062	2.35	10.87	1.99
Sumac. Willis Pope, Alabama	July 27	1	6.0	1.0	4.59	3.39	41.64	1.041	4.80	2.99	2.58
	Aug. 3	5	8.0	1.1	2.31	1.78	67.45	1.052	5.35	6.36	1.79
	Aug. 13	8	9.0	.8	1.76	1.15	64.42	1.062	4.93	8.33	2.27
	Aug. 17	8	9.5	1.0	2.16	1.66	66.16	1.055	4.58	6.90	2.17
	Aug. 27	10	9.6	1.0	2.23	1.70	54.46	1.067	3.40	10.68	2.93
	Sept. 9	13	9.5	1.1	3.69	2.55	64.30	1.069	2.08	12.62	2.56
Gray Top. H. C. Sealey, Columbia, Tenn	July 20	1	5.5	.9	3.41	2.42	51.54	1.030	3.19	2.16	1.79
	July 30	5	7.2	1.0	1.82	1.37	56.91	1.049	3.07	6.08	3.03
	Aug. 7	9	7.3	1.1	1.86	1.38	68.32	1.052	2.82	7.70	2.65
	Aug. 13	9	6.9	1.1	2.14	1.50	69.11	1.050	2.50	7.26	2.57
	Aug. 17	9	7.6	.9	1.60	1.06	65.27	1.063	1.92	10.48	2.79
	Aug. 27	11	7.9	1.0	1.67	1.14	69.05	1.065	1.88	10.73	3.12
	Sept. 9	14	7.0	1.2	2.18	1.45	69.60	1.061	1.53	10.59	2.34

African Sorghum. William E. Parks, Carlisle, Ky	July 17	1	7.5	.8	2.66	2.07	58.49	1.027	2.92	2.98	1.53
	July 23	5	9.1	.7	1.28	.98	61.12	1.040	3.26	5.47	1.66
	Aug. 7	10	9.2	.6	1.30	1.01	65.43	1.058	2.87	9.36	2.33
	Aug. 13	11	8.4	.8	1.25	.94	71.56	1.065	1.17	13.19	1.40
	Aug. 17	11	9.6	.8	1.71	1.26	62.59	1.073	.72	12.85	4.04
	Aug. 27	14	9.4	.9	2.32	1.61	63.28	1.074	.75	13.55	4.04
	Sept. 9	16	9.5	.7	1.66	1.20	55.33	1.067	.77	12.04	3.59
Regular Sorgho. Blymyer & Co	July 19	1	7.5	1.0	3.45	2.61	45.48	1.030	4.76	1.07	2.66
	July 23	5	7.5	.8	1.56	1.27	46.25	1.042	8.75	4.62	1.95
	Aug. 6	9	10.5	.9	1.66	1.30	64.24	1.059	2.81	9.11	2.91
	Aug. 13	9	9.8	1.0	2.00	1.57	65.94	1.067	2.28	11.82	2.58
	Aug. 17	10	9.6	.9	1.85	1.36	65.07	1.065	2.24	11.35	2.37
	Aug. 28	14	10.0	.9	2.15	1.38	66.98	1.063	1.68	11.59	2.77
	Sept. 9	15	9.2	.9	2.08	1.39	58.25	1.067	1.01	12.11	2.81
Golden Sirup. William H. Lytle, Yellow Springs, Ohio	July 12	1	7.2	.8		1.65	65.32	1.021	3.59	.48	.87
	July 20	5	7.8	.6	1.97	1.59	62.71	1.043	3.81	5.38	1.83
	July 27	10	8.7	.7	1.11	1.06	62.67	1.065	2.14	11.23	3.11
	Aug. 13	11	8.6	.9	1.65	1.30	64.60	1.074	1.07	14.31	2.59
	Aug. 17	*10	9.1	.8	1.59	1.22	62.70	1.070	1.37	11.38	4.12
	Aug. 27	*10	9.0	.8	1.53	1.14	59.61	1.066	1.42	11.64	3.45
	Sept. 9	*10	9.0	.8	1.58	1.13	60.97	1.064	1.40	11.06	2.83
Sugar Cane. C. E. Miller, Effingham, Ill	July 13	1	5.5	.9		1.28	53.30	1.029	3.94	1.71	1.09
	July 20	5	5.5	.7	1.90	1.31	54.99	1.046	3.73	5.97	1.96
	Aug. 2	10	5.6	.8	1.01	.65	61.72	1.054	2.96	8.28	2.56
	Aug. 13	12	7.0	.7	1.11	.82	60.43	1.060	2.43	10.06	2.37
	Aug. 17	13	6.1	.7	1.02	.64	68.62	1.032	2.70	2.86	4.39
	Aug. 25	15	5.8	1.0	1.26	.82	63.30	1.063	2.08	11.85	1.92
	Sept. 2	16	5.5	.8	2.08	1.45	67.98	1.051	3.13	6.81	2.57
	Sept. 10	16	5.9	.8	.98	.61	60.86	1.027	3.42	7.96	1.16
Honey Cane. J. H. Clark, Pleasant Hill, La	July 30	1	7.7	1.2	2.79	2.26	66.15	1.036	4.72	2.74	2.00
	Aug. 9	5	9.1	1.2	2.95	2.33	67.11	1.043	4.71	4.66	1.80
	Aug. 14	5	10.9	1.0	2.68	2.10	60.83	1.041	4.33	4.71	1.72
	Aug. 27	8	12.1	1.1	2.72	2.18	69.34	1.055	3.65	7.44	2.89
	Sept. 6	10	11.7	1.0	2.54	2.02	69.74	1.061	2.73	10.43	2.25
Honey Top or Texas Cane. Brussels, Mo	Aug. 6	1	8.0	1.1	2.15	1.72	68.72	1.033	5.07	1.28	2.31
	Aug. 13	2	9.8	1.1	2.63	2.05	70.92	1.038	4.54	3.16	1.93
	Aug. 14	2	11.1	1.1	2.73	2.20	71.03	1.033	4.66	2.45	1.51
	Aug. 28	5	11.2	.8	1.51	1.17	70.09	1.046	4.88	5.22	1.85
	Aug. 30	9	12.3	1.2	2.84	2.31	70.60	1.053	4.11	7.83	1.93
	Sept. 6	10	12.0	1.2	3.04	2.41	71.23	1.053	3.86	7.95	1.82
Sprangle Top. Willis Pope, Alabama	Aug. 4	1	8.2	1.1	2.48	1.85	70.37	1.034	5.07	2.13	1.60
	Aug. 9	3	9.0	1.1	2.56	1.99	68.80	1.039	5.11	3.23	1.67
	Aug. 28	5	10.8	.9	1.51	1.16	68.00	1.045	5.33	4.73	1.71
	Aug. 30	9	11.9	1.1	2.62	2.02	70.99	1.050	4.43	6.67	1.71
	Sept. 6	10	12.5	1.1	2.60	2.12	71.08	1.057	3.16	9.58	1.88
Hybrid. J. C. Moore, San Diego, Cal	July 15	1	7.5	.9		2.53	44.68	1.017	2.70	.83	.53
	July 22	5	8.7	.8	2.22	1.50	61.96	1.024	3.27	2.35	1.02
	Aug. 7	10	9.5	.8	1.64	1.19	69.63	1.037	1.75	4.43	2.69
	Aug. 10	11	8.5	.9	2.24	1.49	69.72	1.022	2.39	.56	2.58
	Aug. 21	14	10.0	.9	1.95	1.83	54.13	1.027	1.64	2.89	2.13
	Sept. 6	16	9.1	1.0	1.98	1.37	69.46	1.027	2.58	1.75	2.29

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR SORGHO-CANES.

1. Panicle just appearing.
2. Panicle two-thirds out.
3. Panicle entirely out. No stalk above the highest leaf.
4. Panicle just blossoming out at the top.
5. Flowers all out, stamens dropping off.
6. Seed well set.
7. Seed entering the milk state.
8. Seed becoming doughy.
9. Seed doughy; becoming dry.
10. Seed almost dry; easily crushed.
11. Seed dry; easily split.
12. Seed split with difficulty.
13. Seed split with more difficulty.
14. Seed split with still more difficulty.
15. Seed still harder.
16. Seed still harder yet.
*10. Beyond the 10th stage, but not determined because the seed was taken by birds.

Varieties of sorgho-canes.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Honduras. Seed from canes grown on arsenal grounds for the Department.	July 24	1	7.8	.9	1.62	1.16	54.71	1.028	3.71	1.31	2.52
	July 30	5	10.1	.7	2.10	1.63	64.50	1.044	3.08	5.60	2.34
	Aug. 9	8	10.1	.9	2.10	1.65	68.88	1.043	2.04	7.01	1.88
	Aug. 10	9	10.5	.9	1.71	1.26	55.85	1.053	1.12	8.64	3.06
	Aug. 23	9	10.0	1.0	1.37	.95	48.58	1.051	2.31	7.34	2.72
	Sept. 2	12	10.3	1.0	1.52	.97	50.45	1.032	1.21	3.45	2.70
	Sept. 6	12	10.6	.9	1.61	1.04	46.41	1.030	2.28	2.97	2.37
Honduras. L. Brande, Mayersville, Tex	Aug. 2	1	8.3	1.3	3.37	2.68	66.64	1.031	2.73	3.75	1.87
	Aug. 9	3	9.4	1.3	2.66	2.07	66.88	1.036	4.65	3.72	1.14
	Aug. 18	2	11.3	1.1	3.35	2.73	71.02	1.036	4.60	3.26	1.60
	Aug. 28	5	12.6	1.1	2.09	1.68	69.67	1.044	4.92	5.04	1.68
	Sept. 6	7	13.5	1.2	2.85	2.38	69.59	1.047	4.08	6.33	1.82
	Sept. 6	9	12.1	1.3	2.97	2.49	69.91	1.047	4.00	6.63	1.55
New Variety. J. W. H. Salle, Strafford, Mo	July 26	1	8.4	.9	1.82	1.34	59.74	1.034	5.44	2.30	2.30
	July 31	5	8.5	.9	1.72	1.33	67.44	1.043	4.89	3.65	2.63
	Aug. 11	8	8.7	.8	1.19	.89	78.52	1.052	4.22	7.17	2.01
	Aug. 18	9	8.0	1.0	1.93	1.47	65.67	1.058	4.09	8.06	2.07
	Aug. 25	10	9.7	1.1	2.14	1.50	66.18	1.058	4.34	8.32	2.11
	Sept. 2	12	8.3	1.1	2.02	1.49	68.62	1.046	3.61	5.29	2.53
Honduras. E. Link, Greenville, Tenn	Aug. 18	1	11.0	1.2	2.75	2.25	62.75	1.031	4.23	2.48	1.39
	Aug. 28	4	12.8	1.2	3.30	2.68	69.26	1.041	4.38	5.14	1.38
	Sept. 6	6	13.4	1.2	2.83	2.24	59.72	1.051	4.28	7.14	1.81
Mastodon. D. W. Aiken, Cokesburg, S. C	July 26	1	8.3	.8	3.19	2.48	59.56	1.037	2.53	4.19	3.02
	Aug. 10	5	10.0	1.0	1.72	1.40	66.30	1.054	3.29	7.98	1.43
	Aug. 19	5	13.2	1.0	3.02	2.45	67.49	1.048	4.30	7.39	.81
	Aug. 19	6	11.6	.9	1.94	1.58	69.82	1.057	2.40	9.43	2.88
	Sept. 2	9	12.6	.9	2.15	1.61	64.07	1.060	1.42	10.72	2.86

Oomseeana Sorghum. D. W. Aiken, Cokesburg, S. C	July 24	1	6.9	.6	2.11	1.49	58.38	1.040	3.16	5.15	2.12
	July 31	5	8.7	.9	1.91	1.54	69.29	1.047	2.54	7.00	2.21
	Aug. 10	9	9.5	.8	1.46	1.09	65.35	1.064	1.52	11.58	3.06
	Aug. 23	10	10.0	1.0	1.94	1.41	70.87	1.043	2.40	6.81	2.44
	Aug. 30	12	9.4	.9	1.42	1.08	55.37	1.061	1.48	11.44	2.44
	Sept. 7	13	9.5	.9	1.65	1.23	63.97	1.067	1.08	11.91	2.61
New Variety. E. Link, Greenville, Tenn	July 24	1	6.6	.8	2.57	1.89	57.78	1.037	3.43	3.95	1.93
	July 30	5	8.8	.8	1.48	1.24	58.79	1.047	3.22	6.39	2.19
	Aug. 9	9	8.5	.8	1.42	1.05	63.31	1.064	2.53	10.27	3.13
	Aug. 18	9	9.0	.7	1.16	.86	63.71	1.060	2.02	10.29	2.55
	Aug. 25	11	9.5	.9	1.81	1.26	77.10	1.058	1.51	10.60	3.59
	Sept. 2	13	9.1	1.0	1.50	1.11	67.06	1.066	1.41	11.56	3.16
Sumac. J. H. Wighton, Mount Olive, Ala	Aug. 2	1	7.2	1.0	3.54	2.73	65.81	1.049	6.67	3.85	2.11
	Aug. 5	4	8.0	1.2	2.21	1.78	62.39	1.053	5.06	5.70	2.73
	Aug. 19	6	8.3	.8	1.35	1.05	62.82	1.060	5.07	7.70	2.65
	Aug. 30	10	8.9	.9	1.62	1.14	64.61	1.061	4.15	9.00	2.50
	Sept. 7	12	9.4	1.2	3.03	2.09	64.45	1.067	3.37	9.99	2.77
Imphee. D. W. Aiken, Cokesburg, S. C	July 30	1	7.3	.9	1.79	1.40	64.21	1.048	6.28	4.08	1.81
	Aug. 3	5	7.7	1.0	1.43	1.29	67.06	1.053	6.13	5.73	1.57
	Aug. 9	6	8.5	.9	1.80	1.40	64.52	1.058	3.34	8.84	2.75
	Aug. 19	8	7.6	1.0	2.38	1.62	62.60	1.065	4.32	9.28	2.93
	Aug. 30	10	8.0	.9	2.10	1.49	63.12	1.068	3.95	9.67	2.51
	Sept. 8	12	8.4	1.1	2.50	1.82	62.24	1.068	3.38	11.34	1.90
Sugar Cane. John W. Borger, Lovilia, Iowa	July 20	1	6.8	.7	1.63	1.23	68.75	1.032	4.94	1.55	1.65
	July 22	5	6.8	.8	2.54	1.86	53.61	1.042	4.69	3.81	1.96
	Aug. 5	9	7.6	1.0	1.31	.99	67.24	1.070	3.48	10.70	3.20
	Aug. 14	10	7.0	.8	1.32	1.02	64.12	1.065	2.65	10.84	2.71
	Aug. 28	12	7.9	.8	1.51	.97	61.04	1.076	1.78	13.76	3.65
	Sept. 8	14	7.1	.8	1.26	.87	65.35	1.074	1.42	13.05	2.88
Hybrid. E. Link, Greenville, Tenn	July 24	1	7.2	.9	3.27	2.50	56.60	1.031	2.85	3.17	2.32
	Aug. 2	5	9.3	.9	2.01	1.58	69.41	1.050	2.44	7.50	2.82
	Aug. 9	8	8.2	1.0	1.66	1.29	79.39	1.061	1.68	10.42	3.12
	Aug. 14	9	8.5	.9	1.88	1.38	64.14	1.066	1.51	11.86	2.95
	Aug. 23	11	9.0	1.0	2.26	1.71	61.48	1.074	1.04	13.33	4.21
	Aug. 30	13	8.5	.8	1.59	1.16	65.29	1.070	1.39	12.74	3.39
	Sept. 8	14	9.3	.9	1.47	1.16	52.27	1.077	.82	14.28	3.38
Black Top Sorghum. D. W. Aiken, Cokesburg, S. C	July 17	1	5.8	.8	2.27	1.63	47.07	1.032	2.92	3.88	1.52
	July 22	5	6.9	.8	2.86	2.02	46.79	1.043	3.00	5.35	1.84
	Aug. 7	10	6.9	.6	1.07	.74	67.06	1.059	1.31	10.53	2.89
	Aug. 19	10	7.6	.7	1.43	.92	65.02	1.058	1.55	10.39	2.47
	Aug. 26	13	7.1	.8	1.45	.88	61.29	1.074	.73	14.89	1.88
	Sept. 8	15	8.3	.8	2.17	1.23	58.92	1.072	.54	12.82	4.04
Wolf Tail. E. Link, Greenville, Tenn	July 30	1	7.3	1.0	1.80	1.41	62.50	1.037	2.82	4.19	2.20
	Aug. 4	5	8.8	1.0	2.06	1.52	65.65	1.045	2.33	6.92	1.95
	Aug. 9	8	8.7	.8	1.80	1.36	59.20	1.056	2.44	9.24	2.67
	Aug. 19	8	8.0	.8	1.27	.91	64.49	1.063	2.00	10.68	2.84
	Aug. 26	10	8.7	.9	1.98	1.25	64.54	1.058	1.74	10.95	1.68
	Sept. 3	11	9.1	.9	1.84	1.17	65.41	1.056	1.41	10.01	2.50
Valley Broom-Corn. A. G. Richmond, Canajoharie, N. Y	July 13	1	7.5	.9	-----	1.80	39.50	1.013	1.50	.40	1.61
	July 22	5	9.3	.8	1.54	.98	54.90	1.020	1.19	1.32	2.20
	July 24	6	9.8	.9	1.52	.95	44.49	1.030	1.24	2.68	3.21

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR SORGHO-CANES.

1. Panicle just appearing.
2. Panicle two-thirds out.
3. Panicle entirely out. No stalk above the highest leaf.
4. Panicle just blossoming out at the top.
5. Flowers all out; stamens dropping off.
6. Seed well set.
7. Seed entering the milk state.
8. Seed becoming doughy.
9. Seed doughy; becoming dry.
10. Seed almost dry; easily crushed.
11. Seed dry; easily split.
12. Seed split with difficulty.
13. Seed split with more difficulty.
14. Seed split with still more difficulty.
15. Seed still harder.
16. Seed still harder yet.

*10. Beyond the 10th stage, but not determined because the seed was taken by birds.

Varieties of sorgho-canes.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Chinese Evergreen. A. G. Richmond, Canajoharie, N. Y	July 19	1	7.4	.8	2.03	1.56	37.65	1.029	2.52	1.59	2.77
	July 23	4	8.6	.8	1.07	.73	47.35	1.034	2.69	3.36	2.41
Evergreen Broom-Corn. A. G. Richmond, Canajoharie, N. Y	July 20	1	6.4	.9	2.54	1.79	45.06	1.028	2.64	1.92	2.08
	July 23	3	8.6	.9	1.29	.84	44.39	1.026	1.96	1.56	2.38
Early Amber. S. E. Evans, Monroe, Kans	July 15	1	6.3	.5	.....	1.42	51.38	1.021	4.22	.60	.49
	July 22	5	8.5	.6	2.32	1.85	57.05	1.045	4.13	5.50	2.04
	Aug. 4	10	8.7	.7	1.68	1.41	69.11	1.066	2.29	11.97	2.30
	Aug. 9	*10	8.4	.9	1.53	1.28	62.61	1.071	1.83	12.84	3.07
	Aug. 19	*10	9.2	.8	1.67	1.41	57.97	1.069	1.59	10.72	2.83
	Aug. 26	*10	8.8	.8	1.45	1.04	58.60	1.072	1.40	13.07	3.30
	Sept. 3	*10	8.6	.8	1.76	1.13	63.10	1.068	.78	12.80	2.99
* Doura Corn. Seed from South Carolina	Sept. 6	1	7.7	.6	.87	.58	46.04	1.043	2.37	5.37	2.95
	Sept. 7	3	9.3	1.1	2.26	1.46	54.28	1.047	2.42	6.20	2.61
	Sept. 7	5	11.5	1.1	2.70	2.05	49.46	1.042	2.11	5.86	2.35

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR CORN.

1. Ear ready for roasting.
2. Stalk one week after plucking roasting ear.
3. Stalk two weeks after plucking roasting ear.
4. Stalk three weeks after plucking roasting ear.
5. Stalk four weeks after plucking roasting ear.
6. Stalk five weeks after plucking roasting ear.
7. Stalk six weeks after plucking roasting ear.
8. Stalk seven weeks after plucking roasting ear.
X. The ear was left on the stalk and allowed to ripen.

Varieties of corn.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Lindsay's Horse Tooth. —— Lindsay, Portsmouth, Va.....	Aug. 14	1	8.3	1.0	5.48	3.25	63.45	1.045	2.37	6.72	2.20
	Aug. 21	3	9.6	1.2	6.20	4.15	51.91	1.055	1.61	11.00	3.54
	Sept. 4	5	9.5	1.2	2.47	1.85	55.11	1.079	.89	15.16	3.27
	Sept. 11	6	10.3	1.5	3.15	2.35	54.95	1.060	.95	9.97	3.56
	Sept. 13	X	9.0	1.3	2.25	1.56	65.97	1.031	.72	3.58	2.78
Egyptian Sugar. W. R. Shelmire, Chester, Pa.....	July 28	1	7.4	1.0	4.29	2.35	59.47	1.042	2.82	5.24	2.35
	Aug. 7	2	7.0	1.0	3.50	2.40	58.33	1.054	2.17	8.98	2.91
	Aug. 14	3	8.0	1.1	1.98	2.19	58.59	1.059	1.53	10.04	2.82
	Aug. 28	5	8.2	1.1	1.46	1.27	54.49	1.065	1.54	10.65	3.87
	Sept. 4	6	7.7	1.0	1.14	.98	57.54	1.058	1.37	10.82	2.74
	Sept. 13	X	8.0	1.0	1.38	.92	58.33	1.071	1.57	12.14	3.04
White Dent. Thos. L. Jones, Warrenton, N. C	Aug. 14	1	9.0	1.1	4.74	3.26	61.92	1.046	2.50	7.06	1.96
	Aug. 24	3	10.0	1.2	7.71	5.32	58.69	1.062	1.87	10.78	2.79
	Sept. 4	5	8.7	1.1	1.92	1.50	61.39	1.059	.85	10.50	5.08
	Sept. 13	X	10.9	1.1	2.80	2.06	58.48	1.045	1.27	7.62	1.59
White Flat Dent, eight-rowed. Washington Market	Aug. 14	1	9.8	1.1	3.74	3.18	63.26	1.040	1.23	6.12	2.62
	Aug. 21	3	8.5	1.2	4.83	3.62	59.14	1.050	.85	10.93	.60
	Sept. 4	5	9.0	1.3	2.46	2.03	61.97	1.055	1.30	9.44	2.96
	Sept. 11	6	9.4	1.3	2.01	1.73	54.95	1.067	.70	11.40	3.97
	Sept. 13	X	10.8	1.0	2.06	1.58	64.03	1.043	2.16	5.85	2.05
Improved Prolific. James M. Thorburn & Co., New York City ..	Aug. 14	1	8.3	1.1	4.07	2.62	44.75	1.042	2.43	5.65	2.38
	Aug. 21	3	9.2	1.2	5.87	4.19	57.29	1.061	.97	10.92	3.10
	Sept. 4	5	9.7	1.2	2.14	1.75	58.74	1.067	.80	11.98	3.76
	Sept 11	6	10.5	1.7	5.16	4.07	67.35	1.061	1.04	9.99	4.10
	Sept. 13	X	7.4	1.2	1.43	1.09	64.37	1.031	2.71	1.62	1.94
Stowell's Evergreen. W. R. Shelmire, Chester, Pa.....	Aug. 14	1	5.6	.8	1.65	.70	70.31	1.048	3.13	7.39	1.88
	Aug. 21	3	7.0	1.1	2.82	1.91	54.89	1.067	1.32	12.07	3.39
	Sept. 4	5	6.0	.9	1.27	.48	49.22	1.061	.87	10.70	3.89
	Sept. 13	X	5.3	1.0	2.27	2.05	58.04	1.063	1.06	11.05	2.47

EXPLANATION OF THE NUMBER INDICATING THE PERIOD OF DEVELOPMENT FOR CORN.

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5. Stalk four weeks after plucking roasting ear.
6. Stalk five weeks after plucking roasting ear.
7. Stalk six weeks after plucking roasting ear.
8. Stalk seven weeks after plucking roasting ear.
X. The ear was left on the stalk and allowed to ripen.

Varieties of corn.	Date.	Development.	Length.	Diameter at butt.	Total weight.	Stripped weight.	Per cent. of juice expressed.	Specific gravity of juice.	Per cent. of glucose in juice.	Per cent. of sucrose in juice.	Per cent. of solids not sugar in juice.
			Feet.	*Inches.*	*Pounds.*	*Pounds.*					
Early Minnesota Dent. M. J. Varney, North Collius, N. Y.	July 24	1	6.5	.7	1.68	1.08	36.85	1.033	1.55	4.30	2.62
	Aug. 7	4	5.8	.9	1.83	.80	45.66	1.070	.68	12.09	4.66
	Aug. 14	5	5.9	.8	.82	.62	33.33	1.057	.68	7.95	5.47
	Aug. 28	7	5.2	.8	.36	.20	20.64	1.067	1.76	10.69	5.08
	Sept. 13	X	6.0	.8	1.92	1.47	42.15	1.063	.79	9.97	4.52
Mammoth Dent, Chester County, Pennsylvania. M. J. Varney, North Collius, N. Y.	July 28	1	8.0	1.3	3.62	1.71	55.15	1.038	1.93	4.83	2.54
	Aug. 7	2	6.6	1.0	2.96	1.85	56.18	1.057	1.14	9.62	3.55
	Aug. 14	3	7.2	1.3	3.83	2.39	55.65	1.060	.97	9.25	4.50
	Aug. 28	5	8.1	1.3	2.68	1.87	51.29	1.064	.96	11.03	4.41
	Sept. 4	6	6.5	1.2	1.63	1.07	45.68	1.072	.70	11.85	3.22
	Sept. 13	X	7.0	1.1	2.09	1.58	69.40	1.062	.74	10.50	4.11
Sanford Corn. F. B. Hatheway, Vt.	July 28	1	5.5	.9	4.46	1.90	59.18	1.037	1.90	4.64	2.52
	Aug. 7	2	5.5	.8	1.65	.85	57.11	1.059	1.58	9.66	4.91
	Aug. 14	3	6.2	1.1	2.31	1.58	55.80	1.062	1.68	10.84	3.11
	Aug. 28	5	7.2	.9	2.00	1.01	46.39	1.064	.87	10.00	5.34
	Sept. 4	6	5.7	.9	2.11	1.43	32.87	1.062	.88	10.57	3.11
	Sept. 10	X	6.0	.9	1.76	1.08	55.91	1.047	1.25	7.38	2.59
White Imphee. E. Link, Greenville, Tenn.	Aug. 2	1	8.7	.8	1.64	1.32	70.98	1.031	2.95	3.05	2.10
	Aug. 9	3	9.9	.7	1.75	1.41	69.84	1.042	2.68	6.13	2.23
	Aug. 23	7	9.5	.7	2.75	2.21	69.15	1.068	2.47	10.17	2.01
	Sept. 3	10	10.4	.8	1.50	1.23	68.95	1.055	1.48	10.43	2.31
	Sept. 8	11	9.4	.7	1.73	1.35	52.77	1.060	1.43	11.41	2.21
Rice or Egyptian Corn. Root & Hollingsworth, Kinsley Court-House, Edwards County, Kans.	July 26	1	6.4	.6	1.84	1.07	44.75	1.031	1.18	3.28	2.80
	July 26	3	6.8	.6	1.53	.91	43.98	1.026	.92	2.97	2.64
	July 31	5	7.4	.7	1.11	.75	48.08	1.052	1.09	6.95	4.22
	Aug. 11	8	7.5	.7	2.23	1.29	50.76	1.051	1.13	7.40	3.84
	Aug. 28	10	8.0	.8	2.49	1.17	46.44	1.038	.60	5.65	3.34
	Sept. 9	11	7.9	.9	2.55	1.36	49.75	1.051	.42	7.90	3.48